

Toy Mountain Group Final Environmental Assessment

EA # DOI-BLM-ID-B030-2013-0021-EA

Idaho BLM NEPA Permit Renewal Team

November 2013



Bureau of Land Management
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1 INTRODUCTION

1.1 Title

Toy Mountain Group Allotments Livestock Grazing Permit Renewal Environmental Assessment

1.2 Name and Location of Preparing Office

Bureau of Land Management
Idaho State Office
1387 S. Vinnell Way
Boise, ID 83709

1.3 Background

The BLM Owyhee Field Office has prioritized and grouped allotments to fully process and renew grazing permits in accordance with the Order Approving Stipulated Settlement Agreement (United States District Court for the District of Idaho Case 1:97-CV-00519-BLW) dated June 26, 2008. The agreement defined a schedule for completing the required environmental analyses and to issue final decisions and grazing permits for a portion of the Owyhee 68 allotments.

This Environmental Assessment (EA) has been prepared to analyze the impacts of renewing livestock grazing permits for a term of 10 years on 20 allotments in Owyhee County, Idaho. The 20 allotments that make up the Toy Mountain Group (also referred to as Group 3) include the Alder Creek FFR (0639), Boone Peak (0589), Box T (0534), Bridge Creek (0590), Browns Creek (0585), Garrett FFR (0626), Hart Creek (0532), Josephine FFR (0458), Lone Tree (0587), Louisa Creek (0601), Meadow Creek (0491), Moore FFR (0606), Munro FFR (0461), Quicksilver FFR (0483), Red Mountain (0588), Stahle FFR (0641), Steiner FFR (0613), Toy (0533), West Castle (0648), and Whitehorse/Antelope (0541) allotments (Map GEN-1).

The Toy Mountain Group allotments in this EA, which are under the purview of the Owyhee Field Office, are located adjacent to one another within the northern portion of Owyhee County, Idaho. Applications for renewal of grazing permits for use in these allotments have been received by BLM from permittees who are currently authorized to graze livestock in these allotments.

BLM received an application for renewal of a grazing permit for use in the Hart Creek, Box T, Meadow Creek FFR and Alder Creek FFR allotments on May 29, 2013, from Robert Thomas. Although most livestock numbers, dates of use, and animal unit months for these allotments do not differ from the current permit, Mr. Thomas provided a narrative with his application that defined the current grazing schedules for pastures in the allotments that he would like to maintain, requested a response to a request to use 1,014 AUMs of voluntary nonuse in the Hart Creek allotment, and asked if two existing, but not functioning, spring developments¹ in pasture 1 of the Box T allotment could be reconstructed. A copy of the application, along with the 1997 permit identifying terms and conditions of the current authorization, is provided in Appendix D.

¹ The two existing springs that were identified as located in T.6S., R.2W., Section 35 are not listed as BLM projects, although both were developed at one time to provide livestock water. Review of notes from the 5/23/2013 meeting with Mr. Thomas and the USGS topographic maps locate one spring in the SE¼ of the NE¼ of Section 35 and the other spring in the NW¼ of the SE¼ of Section 34.

BLM received a proposed update for renewal of a grazing permit for use in the Lone Tree and Josephine FFR allotments on July 25, 2013, from Steve Boren representing the Josephine Ranch. The update identified intent to maintain projects with an emphasis on water developments, intent to reduce mid-summer grazing use in riparian areas, and a request for authorization to remove juniper. No earlier application for grazing permit renewal from Josephine Ranch is on file. As a result, the update received is in addition to current terms and conditions of the existing permit for grazing use in the Lone Tree and Josephine FFR allotments. A copy of the proposed update for renewal supplementing the existing permit, along with the 1997 permit identifying terms and conditions of the current authorization, is provided in Appendix D.

BLM received an application for renewal of a grazing permit for use in the Red Mountain, Boone Peak, Bridge Creek, Stahle FFR, and Quicksilver allotments on June 24, 2011, from Rohl Hipwell. The application deleted terms and conditions on the application form provided to the permittee and included an attachment defining new terms and conditions. The attachment requested changes to allotment boundaries that would result from a different grouping of pastures where he is currently authorized to graze cattle, defined the season of use in each of the allotments created by the new grouping of pastures, calculated authorized use based on percent public land in the created allotments, and requested the construction of one new fence and one new spring development.

Following a meeting with Mr. Hipwell on May 22, 2013, Mr. Hipwell submitted a modification to his application, received by the BLM on July 29, 2013. The revised application modified the earlier application with the request that grazing be authorized year-round in all allotments, with the provision that annual grazing will occur on a shorter period of use for all allotments; the revision also requested additional projects. Mr. Hipwell requested: 1) authorization to clear areas of juniper domination within 300 feet of developed springs, 2) that low-elevation sites be seeded for the reintroduction of deep-rooted perennial species, 3) that large expanses of rangeland dominated by junipers be cleared, 4) that large expanses of rangeland dominated by too-dense sagebrush be mechanically treated to reduce sagebrush dominance, and 5) further cooperative assessment of the functioning condition of springs and riparian areas with consideration of opportunities to apply to fence (or develop and fence) such areas. A copy of the application and modification with subsequent clarification of footnotes to the modification is provided in Appendix D.

BLM received an application for renewal of a grazing permit for use in the Red Mountain allotment on June 24, 2011, from John Edwards. The application deleted terms and conditions on the application form provided to Mr. Edwards; an attachment defining terms and conditions that was identical to the attachment to Mr. Hipwell's application that was received by BLM on the same day. Approximately 6 months subsequent to receipt of the June 24, 2011, application from Mr. Edwards, he sent a letter to the BLM clarifying his application and stating that his application was an unmodified application signed and dated June 20, 2011. No additional application for permit renewal was received from Mr. Edwards following a May 22, 2013, meeting with Doug Hipwell, the authorized representative for Mr. Edwards. A copy of the June application and subsequent clarification, along with the 1997 permit held by Elmer Stahle², is provided in Appendix D.

BLM received an application for renewal of a grazing permit for use in Toy, West Castle, Browns Creek, Whitehorse/Antelope, and Garrett FFR allotments on June 13, 2013, from Scott and Sherri Nicholson. BLM also met with Scott on November 4, 2013 to clarify detail in that application. In addition to the request that suspension AUMs in each of the allotments be recognized, the application provided a planned

² John Edwards currently holds the permit for winter grazing use in the Fossil Creek pasture (pasture #1) in the Red Mountain allotment as a result of transfers subsequent to 1997.

grazing schedule for the Toy allotment. The application also requested renewal of the permit regarding grazing use in Whitehorse/Antelope, West Castle, Browns Creek, and Garrett FFR allotment, with terms and conditions unchanged from the existing permit. A copy of the application is provided in Appendix D.

BLM received an application for renewal of the grazing permit for use in Louisa Creek and Steiner FFR allotments from John Steiner, authorized representative for the Estate of Charles Steiner, on October 31, 2011. The application requested renewal with terms and conditions of the existing permit unchanged. No revisions to the 2011 application were received from the permittee following a meeting with BLM in May 2013. A copy of the application is provided in Appendix D.

BLM received an application for renewal of a grazing permit for use in the Munro FFR allotment on May 20, 2013, from Joe Parkinson. The application requested renewal of the grazing permit, changing only the dates of use in the C (Custodial) category allotment to be more consistent with recent and planned grazing use. The application retained authorization defined in the 1997 permit for livestock numbers and seasons of use to be defined at the permittee's discretion. Remaining terms and conditions did not differ from the existing permit. A copy of the application is provided in Appendix D.

BLM received an application for renewal of a grazing permit for use in the Moore FFR allotment on May 20, 2013, from Craig and Georgene Moore. This application replaced the application received from the Moore's on June 2, 2011, and requested renewal of the grazing permit, changing only the dates of use in the C (Custodial) category allotment to be more consistent with recent and planned grazing use. The application retained authorization defined in recent annual applications and billings for livestock numbers and seasons of use to be defined at the permittee's discretion. Remaining terms and conditions did not differ from the existing permit. A copy of the application is provided in Appendix D.

Renewed grazing permits would be in conformance with the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a), ensure compliance with the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Idaho S&Gs) adopted in 1997 (Appendix A), and comply with 43 CFR 4100 – Grazing Administration. Federal actions must be analyzed in accordance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations to determine potential environmental consequences.

The lands involved in the analysis for grazing permit renewal in the Toy Mountain group of allotments are located as described in Table ALLOT-1.

Table ALLOT-1: Lands involved in the Toy Mountain Group allotments grazing permit renewal process

Meridian	Township	Range	Sections	Acres Public Domain
Boise	4S	1E	31-34	135,500
	4S	1W	19, 22-35	
	4S	2W	23, 24, 25-27, 34-36	
	5S	1E	3-9, 17-21, 29-32	
	5S	1W	1-35	
	5S	2W	1-3, 8-36	
	5S	3W	13, 14, 23-26, 33-36	
	6S	1E	6	
	6S	1W	1-23, 26-35	
	6S	2W	1-19, 21-26, 28-31, 33-36	
	6S	3W	1-4, 9-17, 20-28, 34, 35	

Meridian	Township	Range	Sections	Acres Public Domain
	7S	1W	2-11, 15-21, 28-32	
	7S	2W	1-15, 17, 18, 20-36	
	7S	3W	1, 12, 13, 23, 25-29, 31-36	
	8S	1W	6, 7	
	8S	2W	1-12, 14-017, 20-22, 28-33	
	8S	3W	1-17, 20-23, 26-28, 34, 35	
	8S	4W	1	
	9S	2W	4-6, 8, 9	

The allotments and pastures of the Toy Mountain Group and their acreage are summarized in Table ALLOT-2.

Table ALLOT-2: Allotment and pasture acreage of the Toy Mountain Group

Allotments and Pastures	BLM Acreage	Private Acreage	State Acreage	Total Acreage
Alder Creek FFR	525	1,238		1,762
01	525	1,238		1,762
Boone Peak	9,455	4,843	647	14,945
01	9,455	4,843	647	14,945
Box T	7,421	125	8	7,554
01	2,835	13	0	2,848
02	2,289	15	1	2,304
03	1,278	66		1,344
04	1,019	30	7	1,057
Bridge Creek	2,567	10		2,577
01	2,567	10		2,577
Brown's Creek	3,862	16	11	3,889
01	2,362	16	11	2,388
02	1,501		0	1,501
Garrett FFR	660	1,818	670	3,148
01	93	204		296
02	28	103	30	161
03	78	634	640	1,351
04	193	151		344
05	127	559		685
06	141	168		310
Hart Creek	24,968	1,078	651	26,697
01	8,612	613		9,225
02	9,263	424	639	10,327
03	7,093	41	12	7,146
Josephine FFR	346	2,369	146	2,861

Allotments and Pastures	BLM Acreage	Private Acreage	State Acreage	Total Acreage
01	346	2,369	146	2,861
Lone Tree	7,131	235	8,177	15,542
01	4,907	91	19	5,017
03	779	107	2940	3,826
04	515	2	1,638	2,155
05	341	35	2,803	3,179
06	589	1	776	1,366
Louisa Creek	9,911	681	0	10,592
01	2,086	1	0	2,087
02	1,828	0		1,829
03	3,046	33		3,079
04	1,084	40		1,123
05	1,011	607		1,618
06	856	1		857
Meadow Creek FFR	360	493		853
01	360	493		853
Moore FFR	327	501	22	850
01	327	501	22	850
Munro FFR	78	506		584
01	78	506		584
Quicksilver FFR	178	2,473	626	3,277
01	54	612		667
02	53	1,238	626	1,917
03	70	623		694
Red Mountain	14,680	94	1,277	16,052
01	3,546	74	626	4,246
02	4,352	13	11	4,376
03	6,782	7	640	7,429
Stahle FFR	87	638		725
01	87	638		725
Steiner FFR	1,574	4,445	1,256	7,275
01	1,221	3,097	1,256	5,575
02	353	1,348		1,701
Toy	3,569	1,687	150	5,406
01	1,408	3	147	1,559
02	780	80		860
03	597	35	1	633
04	784	1,569	1	2,354
West Castle	9,785	347		10,132

Allotments and Pastures	BLM Acreage	Private Acreage	State Acreage	Total Acreage
01	9,785	347		10,132
Whitehorse/Antelope	38,016	1,035	1,860	40,911
01	5,832	47	8	5,887
02	5,947	132	612	6,691
03	9,652	241	600	10,493
04	4,158	31		4,189
05	2,088	100		2,188
06	8,773	451	639	9,863
07	1,566	33	1	1,600
Group Total	135,500	24,633	15,501	175,633

Alder Creek FFR Allotment (0639)

The Alder Creek FFR allotment is located approximately 12 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP, the land use plan for lands overseen by the Owyhee Field Office, categorized the Alder Creek FFR allotment as an Improve (I) category allotment with a low priority for management. Categorization of allotments in that land use plan prioritized development and implementation of grazing systems to meet multiple use resource objectives and rangeland health standards based on resource conditions, potentials, and concerns, as well as economics, present management, and other criteria.

In addition to allocating livestock grazing within the Alder Creek FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, crucial big game winter habitat (e.g., mule deer), and special status species (bighorn sheep, plants, redband trout, and sage-grouse)³.

One existing grazing permit authorizes livestock grazing use of the Alder Creek allotment with a current total permitted use of 60 animal unit months (AUMs)⁴, all of which are active use and none are suspension AUMs. Although the existing permit identifies a season of use between 12/1 and 12/31, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that the allotment is typically used beginning in late April and extending to mid- or late June. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Boone Peak Allotment (0589)

The Boone Peak allotment is located approximately 15 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Boone Peak allotment as an Improve (I) category allotment with a high priority for management. In addition to allocating livestock grazing within the Boone Peak allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, perennial surface water, riparian/wetland ecosystems, and special status species (plants and redband trout).

³ See Section 1.7 of this EA for ORMP resource objectives or the PORMP and FEIS Appendix LVST-1 (USDI BLM, 1999b)

⁴ One animal unit month (AUM) is the amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

One existing grazing permit authorizes livestock grazing use of the Boone Peak allotment with a current total permitted use of 2,876 AUMs, of which 2,094 AUMs are active use and 782 are suspension AUMs. The authorized season of use for the allotment is June 1 to October 31 annually. Recent actual use data provided annually by the permittee indicate that livestock grazing in the one pasture of the Boone Peak allotment is typically initiated in early June and extends until late October or early November. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Box T Allotment (0534)

The Box T allotment is located approximately 14 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Box T allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Box T allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (plants, redband trout, sage-grouse, spotted frog, and western toad).

One existing grazing permit authorizes livestock grazing use of the Box T allotment with a current total permitted use of 2,379 AUMs, of which 1,774 AUMs are active use and 605 are suspension AUMs. The authorized season of use for the allotment is June 1 to November 30 annually. Recent actual use data provided annually by the permittee indicate that pastures 1 and 3 are typically grazed beginning in early June and extended through early July. Grazing use in pastures 2 and 4 typically begins after June and at times not until October, with grazing use usually completed by late October or late November. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Bridge Creek Allotment (0590)

The Bridge Creek allotment is located approximately 15 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Bridge Creek allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Bridge Creek allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout).

One existing grazing permit authorizes livestock grazing use of the Bridge Creek allotment with a current total permitted use of 885 AUMs, of which 664 AUMs are active use and 221 are suspension AUMs. The authorized season of use for the allotment is July 1 to October 31 annually. Recent actual use data provided annually by the permittee indicate that the one pasture allotment is typically grazed beginning in early July and ending in late October. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Browns Creek Allotment (0585)

The Browns Creek allotment is located approximately 8 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Browns Creek allotment as an Improve (I) category allotment with a low priority for management. In addition to allocating livestock grazing within the Browns Creek allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Browns Creek allotment with a current total permitted use of 1,410 AUMs, of which 793 AUMs are active use and 617 are suspension AUMs⁵. The authorized season of use for the allotment is April 1 to June 15 annually. Recent actual use data provided annually by the permittee indicates that the two pastures are typically grazed in a two-pasture rest-rotation schedule, with rest of each pasture occurring in alternate years. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Garrett FFR Allotment (0626)

The Garrett FFR allotment is composed of six separate parcels, each associated with private land and located approximately 8 miles south of Oreana, Idaho (Map GEN-1). The ORMP categorized the Garrett FFR allotment as an Improve (I) category allotment with a low priority for management. In addition to allocating livestock grazing within the Garrett FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout).

One existing grazing permit authorizes livestock grazing use of the Garrett FFR allotment with a current total permitted use of 31 AUMs, all of which are active use and none are suspension AUMs. Actual use annually submitted by the permittee for the Garrett FFR allotment identifies grazing during December in most years. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Hart Creek Allotment (0532)

The Hart Creek allotment is located approximately 9 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Hart Creek allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Hart Creek allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (bighorn sheep, collared lizard, plants, redband trout, sage-grouse, and western groundsnake).

One existing grazing permit authorizes livestock grazing use of the Hart Creek allotment with a current total permitted use of 3,573 AUMs, of which 2,365 AUMs are active use and 1,208 AUMs are suspension AUMs⁶. The authorized season of use for the allotment is March 1 to May 31 annually. Recent actual use data provided annually by the permittee indicates that pastures 1 and 2 are grazed in a 2-year rest-rotation schedule, with each grazed from early March to late April one year, followed by rest in the other year.

⁵ While a 2012 permit renewal completed in accordance with a rider to the 2012 Appropriations Act identifies no suspension in the Browns Creek allotment, the valid permit for grazing use is the still valid 1997 permit pending its renewal in compliance with the Idaho S&Gs and the ORMP (see the 2/29/2000 Memorandum Decision and Order of the United States District Court for the District of Idaho in *IWP v Hahn*). During the short term of implementing the revised grazing regulations in 2006, the suspension was likely removed from the record as part of an effort to offer a replacement permit.

⁶ The valid terms and conditions of the permit for grazing use are those on the 1997 permits, pending renewal in compliance with the Idaho S&Gs and the ORMP (see the 2/29/2000 Memorandum Decision and Order of the United States District Court for the District of Idaho in *IWP v Hahn*). Grazing authorization in the Hart Creek allotment was a portion of two 1997 permits and by 2013 had been consolidated into one authorization. While transfers of authorization and a 2012 permit renewal completed in accordance with a rider to the 2012 Appropriations Act identifies a lesser number of suspension AUMs in the Hart Creek allotment, the 1997 permit held by Robert Thomas included 808 AUMs of suspension and the permit transferred to Tom Nicholson in 1998 included 400 AUMs suspension, for a total suspension of 1,208 AUMs.

Pasture 3 is typically used from late April to early June annually. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Josephine FFR Allotment (0458)

The Josephine FFR allotment is located approximately 4 miles southwest of Triangle, Idaho (Map GEN-1). The ORMP categorized the Josephine FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Josephine FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, riparian/wetland ecosystems, and special status species (spotted frog).

One existing grazing permit authorizes livestock grazing use of the Josephine FFR allotment with a current total permitted use of 20 AUMs, all of which are active use and none are suspension AUMs. Although the authorized season of use for the allotment is December 1 to December 31 annually, the permit includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicates that grazing use in Josephine FFR allotment has occurred at various times through the years, with no consistent schedule. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Lone Tree Allotment (0587)

The Lone Tree allotment is located approximately 5 miles southwest of Triangle, Idaho (Map GEN-1). The ORMP categorized the Lone Tree allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Lone Tree allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, perennial surface water, riparian/wetland ecosystems, and special status species (plants, redband trout, and sage-grouse, and spotted frog).

One existing grazing permit authorizes livestock grazing use of the Lone Tree allotment with a current total permitted use of 2,038 AUMs, of which 1,523 AUMs are active use and 515 AUMs are suspension AUMs. The authorized season of use for the allotment is May 15 to October 31 annually. Recent actual use data provided annually by the permittee indicates that grazing use of pasture 1 and 2 have occurred between mid-May and late June, while use in pasture 3 has begun in mid-June or mid-July and ended by late August. Grazing use of the remaining pastures has almost consistently occurred after August 1 and ended by late November. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Louisa Creek Allotment (0601)

The Louisa Creek allotment is located approximately 3 miles east of Triangle, Idaho (Map GEN-1). The ORMP categorized the Louisa Creek allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Louisa Creek allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout, and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Louisa Creek allotment with a current total permitted use of 2,522 AUMs, of which 1,868 AUMs are active use and 654 AUMs are suspension AUMs. The authorized season of use for the allotment is May 1 to October 31 annually. Recent actual use

data provided annually by the permittee indicates that grazing use of pastures 1 and 2 alternates between early use (through late June) and late use (beginning in early October). The remaining pastures are typically use mid-season from early July to late September. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Meadow Creek FFR Allotment (0491)

The Meadow Creek FFR allotment is located approximately 6 miles northeast of Triangle, Idaho (Map GEN-1). The ORMP categorized the Meadow Creek FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Meadow Creek FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, and special status species (plants and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Meadow Creek FFR allotment with a current total permitted use of 47 AUMs, all of which are active use and none are suspension AUMs. Although the existing permit identifies a season of use between 12/1 and 12/31, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that the allotment is typically used after mid-July, with use recorded as late in the year as December 1. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Moore FFR Allotment (0606)

The Moore FFR allotment is located approximately 7 miles south of Triangle, Idaho (Map GEN-1). The ORMP categorized the Moore FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Moore FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout).

One existing grazing permit authorizes livestock grazing use of the Moore FFR allotment with a current total permitted use of 48 AUMs, all of which are active use and none are in suspension. Although the existing permit identifies a season of use between 12/1 and 12/31, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that the allotment is typically used after June 1, with livestock removed from the allotment by early November. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Munro FFR Allotment (0461)

The Munro FFR allotment is located approximately 4 miles north of Triangle, Idaho (Map GEN-1). The ORMP categorized the Munro FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Munro FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified included the ecological condition of vegetation communities and special status species (sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Munro FFR allotment with a current total permitted use of 15 AUMs, all of which are active use and none are suspension AUMs. Although the existing permit identifies a season of use between 12/1 and 12/31, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee have identified non-use between 2005 and 2012. The

permittee identified during a May 2013 meeting that the actual use report did not include incidental grazing use that occurs on the public parcels in the allotment that are fenced separate from private land in the allotment. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Quicksilver FFR Allotment (0483)

The Quicksilver FFR allotment is composed of two parcels located approximately 18 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Quicksilver FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Quicksilver FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the ecological condition of vegetation communities, juniper encroachment, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Quicksilver FFR allotment with a current total permitted use of 12 AUMs, all of which are active use and none are in suspension. Although the existing permit identifies a season of use between 12/1 and 12/31 annually, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that grazing use in pasture 1 of the allotment typically occurs in May and/or October, while use in pastures 2 and 3 occurs typically after early June and often extends to mid-October. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Red Mountain Allotment (0588)

The Red Mountain allotment is located approximately 7 miles west of Oreana, Idaho (Map GEN-1). The ORMP categorized the Red Mountain allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Red Mountain allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout and sage-grouse).

Two existing grazing permits authorize livestock grazing use of the Red Mountain allotment with one operator's permitted use of 2,153 AUMs, of which 1,624 AUMs are active use and 529 AUMs are in suspension; the other operators permitted use is 1,425 AUMs, of which 375 AUMs are active use and 1,050 AUMs are in suspension. The authorized season of use for the allotment is a split season of April 1 to May 30 and November 1 to December 31 annually for the first of the operators listed above and October 1 to February 28 for the other operator. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Stahle FFR Allotment (0641)

The Stahle FFR allotment is located approximately 11 miles southwest of Oreana, Idaho (Map GEN-1). The ORMP categorized the Stahle FFR allotment as a Custodial (C) category allotment. In addition to allocating livestock grazing within the Stahle FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified included the ecological condition of vegetation communities, perennial surface water, riparian/wetland ecosystems, and special status species (plants, redband trout, and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Stahle FFR allotment with a current total permitted use of 35 AUMs, all of which are active use and none are in suspension. Although the

existing permit identifies a season of use between 12/1 and 12/31 annually, it also includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that grazing use typically occurs in the Stahle FFR allotment in the spring in late May and again in the fall in late October. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Steiner FFR Allotment (0613)

The Steiner FFR allotment is composed of two parcels immediately south of Triangle, Idaho (Map GEN-1). The ORMP categorized the Steiner FFR allotment as an Improve (I) category allotment with a low priority for management. In addition to allocating livestock grazing within the Steiner FFR allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, juniper encroachment, perennial surface water, riparian/wetland ecosystems, and special status species (sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Steiner FFR allotment with a current total permitted use of 98 AUMs, all of which are active use and none are in suspension. Although the authorized season of use for the allotment is December 1 to December 31 annually, the permit includes a term and condition that the number of livestock and season of use within the allotment is at the permittee's discretion. Recent actual use data provided annually by the permittee indicate that grazing use typically occurs in pasture 1 of the Steiner FFR allotment beginning in late April and extending to late November. Pasture 2 is typically used from mid-July to late September. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Toy Allotment (0533)

The Toy allotment is composed of three parcels located approximately 6 miles north of Triangle, Idaho (Map GEN-1). The ORMP categorized the Toy allotment as a Maintain (M) category allotment. In addition to allocating livestock grazing within the Toy allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, juniper encroachment, perennial surface water, riparian/wetland ecosystems, and special status species (redband trout, sage-grouse, and spotted frog).

One existing grazing permit authorizes livestock grazing use of the Toy allotment with a current total permitted use of 1,253 AUMs, of which 940 AUMs are active use and 313 suspension AUMs⁷. The authorized season of use for the allotment is a split season with grazing authorized May 1 to June 30 and also from October 1 to November 15 annually. Recent actual use data provided annually by the permittee indicate that grazing use typically occurs in pasture 1 or 2 from late May to late June, use in pasture 4 has occurred in July, and pasture 3 is typically used from early October to mid-November. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

West Castle Allotment (0648)

⁷ While a 2012 permit renewal completed in accordance with a rider to the 2012 Appropriations Act identifies no suspension in the Toy allotment, the valid permit for grazing use is the still valid 1997 permit pending its renewal in compliance with the Idaho S&Gs and the ORMP (see the 2/29/2000 Memorandum Decision and Order of the United States District Court for the District of Idaho in *IWP v Hahn*). During the short term of implementing the revised grazing regulations in 2006, the suspension was likely removed from the record as part of an effort to offer a replacement permit.

The West Castle allotment is located approximately 3 miles southeast of Oreana, Idaho (Map GEN-1). The ORMP categorized the West Castle allotment as a Maintain (M) category allotment. In addition to allocating livestock grazing within the West Castle allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified included the high erosion potential, ecological condition of vegetation communities, noxious weeds, riparian/wetland ecosystems, and special status species (bighorn sheep, collared lizard, plants, and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the West Castle allotment with a current total permitted use of 861 AUMs, of which 700 AUMs are active use and 161 AUMs are in suspension⁸. The authorized season of use for the allotment is October 1 to February 28 annually. Recent actual use data provided annually by the permittee indicate that grazing use typically occurs from early November to mid-December. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Whitehorse/Antelope Allotment (0541)

The Whitehorse/Antelope allotment is located south of Oreana and east of Triangle, Idaho (Map GEN-1). The ORMP categorized the Whitehorse/Antelope allotment as an Improve (I) category allotment with a medium priority for management. In addition to allocating livestock grazing within the Whitehorse/Antelope allotment, the ORMP identified issues associated with management activities with a listing of resource concerns and applicable ORMP resource objectives. Resource concerns identified include the high erosion potential, ecological condition of vegetation communities, juniper encroachment, noxious weeds, perennial surface water, riparian/wetland ecosystems, and special status species (e.g. bighorn sheep, burrowing owl, collared lizard, plants, redband trout, and sage-grouse).

One existing grazing permit authorizes livestock grazing use of the Whitehorse/Antelope allotment with a current total permitted use of 5,805 AUMs, of which 4,345 AUMs are active use and 1,460 AUMs are suspension AUMs⁹. The authorized season of use for the allotment is March 1 to October 31 annually. Recent actual use data provided annually by the permittee indicate that grazing use typically occurs between mid-March and the end of October. A summary of actual use reported by permittees authorized to graze livestock within the Group 3 allotments is provided in Appendix B.

Rangeland Health Assessments and Determinations

The BLM initiated assessments of the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Appendix A) within allotments of the Toy Mountain group and determinations of causal factors when Standards were not met as early as 2002 in some allotments. Initial allotment reviews, assessments, evaluations, and determinations initiated earlier were supplemented with the most current monitoring data and information available, to complete a consolidated set of determinations for the group. A summary of the findings of rangeland health assessments, evaluations, and determinations for the Toy Mountain Group allotments is provided in table ALLOT-3.

⁸ While a 2012 permit renewal completed in accordance with a rider to the 2012 Appropriations Act identifies no suspension in the West Castle allotment, the valid permit for grazing use is the still valid 1997 permit pending its renewal in compliance with the Idaho S&Gs and the ORMP (see the 2/29/2000 Memorandum Decision and Order of the United States District Court for the District of Idaho in IWP v Hahn). During the short term of implementing the revised grazing regulations in 2006, the suspension was likely removed from the record as part of an effort to offer a replacement permit.

⁹ While a 2012 permit renewal completed in accordance with a rider to the 2012 Appropriations Act identifies no suspension in the Whitehorse/Antelope allotment, the valid permit for grazing use is the still valid 1997 permit pending its renewal in compliance with the Idaho S&Gs and the ORMP (see the 2/29/2000 Memorandum Decision and Order of the United States District Court for the District of Idaho in IWP v Hahn). During the short term of implementing the revised grazing regulations in 2006, the suspension was likely removed from the record as part of an effort to offer a replacement permit.

Table ALLOT-3: Summary of the Standards and associated Guidelines under current BLM grazing management in the Toy Mountain Group allotments

Allotment	Standards met	Standards not met, but making significant progress	Standards not being met	Standards not being met and current livestock grazing is a significant causal factor	Standards not applicable	Not in conformance with associated guidelines
Alder Creek FFR (0639)	7			1, 2, 3, 4, 8	5, 6	1, 3, 4, 5, 7, 8, 9, 12
Boone Peak (0589)	1, 4, 8	2, 3		7	5, 6	10
Box T (0534)			7	1, 2, 3, 4, 8	5, 6	1, 3, 4, 5, 7, 8, 9, 12
Bridge Creek (0590)			1, 4, 7	2, 3, 8	5, 6	5, 7, 8, 12
Browns Creek (0585)		5	1	2, 3, 7, 8	4, 6	5, 7, 8, 10, 12
Garrett FFR (0626)	1, 4, 7, 8	2, 3			5, 6	
Hart Creek (0532)			1, 4	2, 3, 7, 8	5, 6	5, 7, 8, 10, 12
Josephine FFR (0458)	1		4, 8		2, 3, 5, 6, 7	
Lone Tree (0587)	7		1	2, 3, 4, 8	5, 6	4, 5, 7, 8, 9, 12
Louisa Creek (0601)			1, 4, 8	2, 3, 7	5, 6	5, 7, 10
Meadow Creek FFR (0491)		1, 4, 8	7		2, 3, 5, 6	
Moore FFR (0606)	1		4	2, 3, 8	5, 6, 7	5, 7, 8, 12
Munro FFR (0461)	1, 2, 4, 8				3, 5, 6, 7	
Quicksilver FFR (0483)	1, 4	8		2, 3, 7	5, 6	5, 7, 10
Red Mountain (0588)		2, 3, 7		1, 4, 8	5, 6	1, 3, 4, 5, 8, 9, 12
Stahle FFR (0641)	1		4, 8		2, 3, 5, 6, 7	
Steiner FFR (0613)	1, 2, 3		4, 7, 8		5, 6	
Toy (0533)			7	1, 2, 3, 4, 8	5, 6	1, 3, 4, 5, 7, 8, 9, 12
West Castle (0648)			1, 4, 8	2, 3, 7	5, 6	5, 7, 10
Whitehorse/ Antelope (0541)				1, 2, 3, 4, 7, 8	5, 6	1, 3, 4, 5, 6, 7, 8, 9, 10, 12

1.4 Purpose and Need

The purpose of this action is to enable the BLM Owyhee Field Office to determine whether, and under what terms and conditions, to renew grazing permits in the Toy Mountain group of allotments using existing infrastructure and range improvements; the terms and conditions must also be in compliance with the National Environmental Policy Act (NEPA), Federal Land Policy and Management Act (FLPMA), the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Appendix A), the Owyhee Resource Management Plan, and other policies including those outlined in BLM IM-2010-043, consistent with a court-approved settlement agreement requiring BLM to fully process a number of grazing permits on or before December 31, 2013.

This action is needed now because:

- The Owyhee Field Office has received applications to renew grazing permits for the Toy Mountain group of allotments.
- Many of the allotments at issue are currently being managed under permits developed prior to adoption of the Idaho Standards for Rangeland Health and approval of the 1999 Owyhee Resource Management Plan.
- BLM agreed to fully process permits for these allotments on or before December 31, 2013. (*See WWP v. Dyer 1:97-cv-00519-BLW* (Docket # 451 dated May 15, 2008)). To meet this deadline, BLM is not considering new range improvements in this permit renewal process (see Section 2.3 Alternatives Considered but not Analyzed in Detail, for further discussion of this point).

1.5 Supporting Information

Supporting background information not included as part of this EA document consists of:

- Digital photos taken in upland and riparian areas where BLM conducted standards assessment field work
- Upland and riparian field forms used to document Idaho BLM standards assessments
- Field forms and digital photos of upland and riparian monitoring areas
- Sage-grouse habitat assessments
- Special status plant elemental occurrence documents
- Rangeland health assessments, evaluation reports and determinations

All information listed above is available to the public in digital format and may be obtained from BLM upon request.

1.6 Scoping, Issues, and Decision to be Made

1.6.1 Scoping

On January 11, 2013, the Owyhee Field Office initiated by letter the collective public scoping process for Groups 3 through 5 of the Owyhee 68 grazing permit renewal process. These groups are referred to as the Toy Mountain, South Mountain, and Morgan groups, respectively. The letter informed recipients that the purpose of the public outreach effort was to identify resource and management issues associated with the Idaho Rangeland Health Standards and Guidelines and the Owyhee RMP for the purpose of developing grazing management alternatives for all three groups, including for the Toy Mountain Group (Group 3) NEPA document. The letter also requested additional resources and monitoring information that could help the BLM complete the permit renewal process. The letter encouraged comments and information to be received by February 25, 2013, for each group of allotments but did not set a closing date for the

receipt of public comments. The scoping document was also presented to the Shoshone-Paiute Tribe and Owyhee County Commissioners.

The Owyhee Field Office (OFO) range staff and members of the NEPA Permit Renewal (NPR) Team met with the permittees authorized for livestock grazing in the Toy Mountain Group allotments to discuss allotment conditions, objectives, and livestock management on the respective allotments, including amendments to permittees applications.

1.6.2 Scoping Comments

Scoping comments were received from the Idaho Department of Fish and Game (IDFG), Idaho Department of Environmental Quality (IDEQ), Junayo Ranch, and Katie Fite of Western Watersheds Project (WWP).

1.6.3 Issues

Through the scoping process, development of the Rangeland Health Assessment/Evaluation Reports, and Determinations, the BLM interdisciplinary team identified the following issues concerning livestock grazing management in one or more of the Toy Mountain Group allotments:

- Issue 1: Improve upland vegetation plant communities, and in particular, reverse the shift from desirable to undesirable native plant communities.
- Issue 2: Improve watershed conditions within upland sites.
- Issue 3: Limit juniper encroachment into shrub-steppe vegetation types.
- Issue 4: Prevent introduction and spread of noxious and invasive annual species (e.g., cheatgrass).
- Issue 5: Improve riparian vegetation and stream-bank stability associated with streams and springs/seeps.
- Issue 6: Protect special status plants and improve the habitats supporting special status plants.
- Issue 7: Improve wildlife habitats, and habitats necessary to meet objectives for sagebrush-dependent species, including sage-grouse.
- Issue 8: Consider whether grazing can be used to limit wildfire.
- Issue 9: Consider the two-fold issue of climate change and its relationship to the proposed federal action of renewing grazing permits. Livestock grazing in Owyhee County contributes CO₂ and methane emissions to the earth's atmosphere. In addition, climate change, itself a stressor on the sagebrush-steppe semi-arid ecosystem found in the Owyhee Uplands can, when found in conjunction with cattle grazing, further stress the ecosystem's vegetation.
- Issue 9: Consider impacts to regional socioeconomic activity generated by livestock production.

Issues Considered but not Analyzed in Detail

Climate Change

The science on predicting future climate conditions is continuously evolving. Land management actions might contribute to changes in atmospheric greenhouse gas levels, which can affect global climate. Addressing effects on greenhouse gas (GHG) levels within the scope of NEPA is difficult due to the lack of explicit regulatory guidance on how to meaningfully apply existing NEPA regulations to this evolving issue, and due to the continuously evolving science available at varying levels.

Agencies apply the rule of reason to ensure that their discussion pertains to the issues that deserve study and deemphasizes issues that are less useful to the decision regarding the proposal, its alternatives, and mitigation options (40 CFR 1500.4(f), (g), 1501.7, 1508.25). In addressing GHG emissions, the BLM

ensures that such description is commensurate with the importance of the GHG emissions of the proposed action, avoiding useless bulk and boilerplate documentation, so that the NEPA document may concentrate attention on important issues (40 CFR 1502.5, 1502.24).

The BLM's 2008 NEPA Handbook, H-1790-1, explains that a topic must have a cause-and-effect relationship with the proposed action or alternatives to be considered an issue (H-1790-1, p. 40).

Climate change does not have a clear cause-and effect-relationship with the proposed action or alternatives. It is currently beyond the scope of existing science to identify a specific source of greenhouse gas emissions or sequestration and designate it as the cause of specific climate or resource impacts at a specific location.

The proposed action and alternatives, when implemented, would not have a clear, measurable cause-and-effect relationship to climate change because the available science cannot identify a specific source of greenhouse gas emissions such as those from livestock grazing and tie it to a specific amount or type of changes in climate.

Therefore, the effects of livestock grazing to the global climate will not be analyzed in detail in this EA. Effects of climate change on native perennial vegetation resources when also affected by livestock grazing are discussed in the rangeland vegetation Sections of this EA.

1.6.4 Decision to be Made

The Owyhee Field Manager is the authorized officer responsible for the decisions regarding management of public lands within the Owyhee Field Office, including the authorization of livestock grazing through permit within the 20 Toy Mountain Group allotments and also the connected authorization of crossing permits to trail livestock across public land associated with grazing use in the allotments. Based on the results of the NEPA analysis, the authorized officer will make an informed decision whether, and under what terms and conditions, to renew grazing permits and authorize crossing permits. If grazing and crossing permits are offered, management actions, mitigation measures, and monitoring requirements will be prescribed for each of the 20 allotments to ensure management objectives and Idaho S&Gs are met.

1.7 Conformance

The alternatives analyzed here involve public lands and are subject to and in conformance with the ORMP dated December 1999. Relevant objectives from the ORMP are summarized below:

- SOIL 1: Improve unsatisfactory and maintain satisfactory watershed health/condition on all areas.
- SOIL 2: Achieve stabilization of current, and prevent the potential for future, localized accelerated soil erosion problems (particularly on stream banks, roads, and trails).
- WATR 1: Meet or exceed State of Idaho water quality standards on all federally administered waters within the Owyhee Resource Area.
- VEGE 1: Improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas.
- RPN 1: Maintain or improve riparian-wetland areas to attain proper functioning and satisfactory conditions. Riparian-wetland areas include streams, springs, seeps, and wetlands.
- WDLF1: Maintain or enhance the condition, abundance, structural stage, and distribution of plant communities and special habitat features required to support a high diversity and desired population of wildlife.
- FISH 1: Improve or maintain perennial stream/riparian areas to attain satisfactory conditions to support native fish.

- SPSS1: Manage special status species and habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended.
- LVST 1: Provide for sustained level of livestock use compatible with meeting other resource objectives.
- VISL1: Manage the public lands for visual resource values under visual resource management classifications.
- WNES 2: Following any enabling legislation, manage designated wilderness areas to ensure an enduring wilderness resource.
- CULT 1: Protect known cultural resource values from loss until their significance is determined.
- CULT 2: Provide special management emphasis for the protection and conservation of significant cultural resource sites and values.
- ACEC 1: Retain existing and designate new areas of critical environmental concern (ACECs) where relevance and importance criteria are met and where special management is needed to protect the values identified.

Relevant Statutes, Regulations, or Other Plans:

- American Indian Religious Freedom Act of 1978
- Archaeological Resource Protection Act of 1979
- Bald and Golden Eagle Protection Act
- Bureau of Land Management 6840 Manual on Special Status Species Management 2008
- Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy 2010
- Clean Air Act of 1970 (amended 1990)
- Clean Water Act of 1972
- Code of Federal Regulations (CFR); Title 40; Part 1500 – Council on Environmental Quality 2009
- CFR; Title 43; Part 4100 – Grazing Administration – Exclusive of Alaska 2006
- Coordinated Implementation Plan for Bird Conservation in Idaho
- Endangered Species Act (ESA) of 1973, Section 7, as amended
- Federal Land Policy and Management Act 1976
- Greater Sage-Grouse Interim Management Policies and Procedures ¹⁰
- Idaho Comprehensive Wildlife Conservation Strategy 2005
- Idaho Sage-Grouse Conservation Strategy 2006
- Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management
- Interim Strategy for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California 1995 (PACFISH)
- Migratory Bird Treaty Act of 1918 (MBTA)
- National Fire Plan 2000
- National Historic Preservation Act of 1966
- Native American Graves Protection and Repatriation Act of 1990
- North American Mule Deer Conservation Plan
- The Omnibus Public Lands Management Act of 2009
- The Public Rangeland Improvement Act of 1978
- The Taylor Grazing Act of 1934
- The Wilderness Act of 1964

¹⁰ Per BLM Instruction Memorandum No. 2012-043

http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2012/IM_2012-043.html

2 PROPOSED ACTION AND ALTERNATIVES

2.1 Management Common to all Grazing Alternatives

2.1.1 Standard Terms and Conditions of Grazing Permits

All grazing permits issued by the BLM contain the following terms and conditions that will appear on any permit offered, independent of alternatives in this EA:

1. Grazing permit or lease terms and conditions and the fees charged for grazing use are established in accordance with the provisions of the grazing regulations now or hereafter approved by the Secretary of the Interior.
2. They are subject to cancellation, in whole or in part, at any time because of:
 - a. Noncompliance by the permittee/lessee with rules and regulations.
 - b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based
 - c. A transfer of grazing preference by the permittee/lessee to another party.
 - d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described.
 - e. Repeated willful unauthorized grazing use.
 - f. Loss of qualification to hold a permit or lease.
3. They are subject to the terms and conditions of allotment management plans if such plans have been prepared. Allotment management plans **MUST** be incorporated in permits or leases when completed.
4. Those holding permits or leases **MUST** own or control and be responsible for the management of livestock authorized to graze.
5. The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze.
6. The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.
7. Grazing permits or leases are subject to the nondiscrimination clauses set forth in Executive Order 11246 of September 24, 1964, as amended. A copy of this order may be obtained from the authorized officer.
8. Livestock grazing use that is different from that authorized by permit or lease **MUST** be applied for prior to the grazing period and **MUST** be filed with and approved by the authorized officer before grazing use can be made.
9. Billing notices are issued which specify fees due. Billing notices, when paid, become a part of the grazing permit or lease. Grazing use cannot be authorized during any period of delinquency in the payment of amounts due, including settlement for unauthorized use.
10. The holder of this authorization must notify the authorized officer immediately upon discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (cultural items), stop the activity in the area of the discovery and make a reasonable effort to protect the remains and/or cultural items.
11. Grazing fee payments are due on the date specified on the billing notice and **MUST** be paid in full within 15 days of the due date, except as otherwise provided in the grazing permit or lease. If payment is not made within that time frame, a late fee (the greater of \$25 or 10 percent of the amount owed but not more than \$250) will be assessed.
12. No Member of, or Delegate to, Congress or Resident Commissioner, after his/her election of appointment, or either before or after he/she has qualified, and during his/her continuance in office, and no officer, agent, or employee of the Department of the Interior, other than members of Advisory committees appointed in accordance with the Federal Advisory Committee Act (5

U.S.C. App.1) and Sections 309 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.) shall be admitted to any share or part in a permit or lease, or derive any benefit to arise therefrom; and the provision of Section 3741 Revised Statute (41 U.S.C. 22), 18 U.S.C. Sections 431-433, and 43 CFR part 7, enter into and form a part of a grazing permit or lease, so as the same may be applicable.

13. This Grazing Permit:

- a. Conveys no right, title, or interest held by the United States in any lands or resources.
- b. Is subject to (A) modification, suspension, or cancellation, as required by land plans and applicable law; (B) annual review and modification of terms and conditions as appropriate; and (C) The Taylor Grazing Act, as amended, the Public Rangeland Improvement Act, and the rules and regulations now or hereafter promulgated thereunder by the Secretary of the Interior.

2.1.2 Management Objectives

Rangeland Project Maintenance and Construction

Cooperative agreements between the individual livestock operators and the BLM, as well as permits to construct rangeland projects, have assigned responsibility for rangeland improvement maintenance to the individual operators. These cooperative agreements will remain in effect regardless of which grazing permit renewal alternative considered in this NEPA document is implemented. As a result, maintenance of existing projects is outside the scope of this NEPA document.

Suspension AUMs

In accordance with regulation pertaining to reducing permitted use (43 CFR 4110.3-2), alternatives that result in a reduction in active use AUMs to meet Rangeland Health Standards or make significant progress, as well as reductions in active use AUMs to meet ORMP management objectives, would be implemented by reducing permitted use. Active use AUMs no longer available would not be converted to suspension¹¹. Suspension AUMs held on permits prior to this planning process would continue to be held on permits as suspension.

Monitoring

Monitoring studies would be conducted during the term of the grazing permits in accordance with guidance provided by the Idaho State Office Instruction Memorandum IM ID-2008-022: Monitoring Strategies for Rangelands. Monitoring studies during the term of permits would include but are not limited to nested plot frequency, upland utilization, browse utilization, photo plots, multiple indicator monitoring (MIM), stubble height measurement, bank alteration, riparian woody browse utilization, and water quality testing.

2.1.3 Livestock Trailing/Crossing

To address trailing that had been occurring for decades, the OFO sent all permittees letters in 2011 notifying them that they would need to apply for crossing permits for livestock trailing starting in March 2012. In addition to other applications received, the Owyhee Field Office received requests from grazing permit holders for authorization to graze on and annually move livestock across public lands within the Toy Mountain allotments, other than within the allotment where the existing permits authorized grazing use. Proposed trailing routes included those in the Box T, Browns Creek, Garrett FFR, Hart Creek, Josephine FFR, Lone Tree, Louisa Creek, Red Mountain, Toy, and Whitehorse/Antelope allotments. With the applications for trailing received, the field office completed NEPA analysis of alternatives in 2012 to

¹¹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2.

authorize crossing permits (USDI BLM, 2012b). Decisions to authorize crossing permits in the Owyhee Field Office were issued in 2012 and 2013, based on the 2012 NEPA analysis. In addition to the trailing routes used to move livestock to and from the Toy Mountain allotments associated with crossing permits authorized in 2012 and 2013, permittees were asked during meetings with BLM staff in late May 2013, if they had other trailing needs not covered.

Analysis of alternatives to authorize crossing permits completed in the 2012 environmental assessment (USDI BLM, 2012b), specific to consequences of trailing routes and mitigating measures, is incorporated in this NEPA document by reference. One additional trailing route was identified and requested by Robert Thomas during the late May 2013 meetings (see map RNGE-2). No alternative in this NEPA document will consider authorization to move livestock across public land within any of the Toy Mountain Group allotments to access grazing authorizations adjacent to or distant from the Toy Mountain Group allotments.

Additionally, applications for the Toy Mountain Group allotments grazing permit renewal identified no need for trailing/crossing authorizations on adjacent public land to access public land within the Toy Mountain Group allotments. No alternative in this NEPA document will consider authorization to trail livestock to or from any of the Toy Mountain Group allotments on public land outside the Toy Mountain Group allotments in association with the grazing use authorizations.

All alternatives of this NEPA document include authorization to move cattle between pastures within the permitted allotment, although through pastures not scheduled for use at that time. Authorization to move livestock through the permitted allotment to complete livestock moves between pastures as scheduled is a part of each permit. Authorization to move livestock through pastures outside their scheduled use dates is limited to one day unless otherwise noted in the schedule. Authorization to leave sick animals and animals not capable of moving with a herd in an unscheduled pasture is also recognized by the BLM and authorized, as long as sick animals and animals not capable of moving are moved through unscheduled pastures in a timely manner.

2.2 Description of Proposed Action and Alternatives

2.2.1 Alternative 1 – Current Situation

Under Alternative 1 – Current Situation, grazing permits for the 20 allotments of the Toy Mountain Group would be renewed consistent with the summarized actions that have led to the current conditions. In most instances, this alternative should be the livestock management actions that resulted in the current resource conditions and will provide the baseline for comparison of environmental effects resulting from implementation of other alternatives. The pasture-specific seasons of grazing use, with the duration and frequency of use consistent with recent grazing practices (Appendix B), would define the grazing schedule for each allotment. Authorized active use in each of the 20 allotments would be consistent with the maximum actual use that has been made recently. When the current situation for any of the 20 allotments in the Toy Mountain Group closely matches the terms and conditions of the existing permit, the current situation alternative is equivalent to the current permit terms and conditions or a no-action alternative¹².

2.2.2 Alternative 2 – Applicants' Proposed Action

Under Alternative 2 – Applicants' Proposed Action, grazing permits for the 20 allotments of the Toy Mountain Group would be renewed consistent with the actions or terms and conditions of applications

¹² A summary of the no-action alternative, renew grazing permits consistent with existing terms and conditions, is provided in the Alternatives Considered but not Analyzed Section (2.3) of this environmental assessment.

received from permittees. Consultation, cooperation, and coordination between the permittee and BLM should strive toward applications that meet rangeland health standards, are consistent with the guidelines for livestock grazing management, and make progress toward meeting the Owyhee Resource Management Plan objectives. To the degree possible, Alternative 2 should meet the purpose and need stated in this EA.

2.2.3 Alternative 3

Under Alternative 3, grazing permits for the 20 allotments of the Toy Mountain Group would be renewed with actions (terms and conditions) that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet or make significant progress toward meeting standards and the ORMP objectives. In addition, constraints would be applied and actions would be implemented to maintain meeting standards and objectives within pastures where identified resources are present and current conditions are consistent with desired future conditions. Although the frequency of grazing use would be limited during seasons when impacts to identified resources are greatest, flexibility in grazing schedules would be provided. That flexibility would be provided by limiting the duration and intensity of grazing use during identified critical periods to compensate for frequent use during that critical period.

Constraints used to develop Alternative 3 actions are one set of actions that will allow progress toward meeting or maintaining Standards and ORMP objectives. Constraints to seasons, intensity, duration, and/or frequency of grazing use specific to the pastures of each allotment would be applied under Alternative 3 where the following resources are present:

- Special status species:
 - No more than 2 years of use in any consecutive 3-year period during sage-grouse nesting/early brood-rearing season (April 1 to June 30)¹³ when preliminary priority habitat (PPH)-key habitat occurs in the pasture
 - No more than 2 years of use in any consecutive 3-year period during spawning season (March 15 to June 15)¹⁴ when occupied redband trout streams occur on BLM lands in the pasture
 - No more than 2 years of use in any consecutive 3-year period during breeding (egg mass stage) season (May 1 to June 15)¹⁵ when occupied Columbia spotted frog streams and lentic areas occur in the pasture
- Upland perennial vegetation:
 - When the mean elevation of the pasture is less than 5,000 feet¹⁶,

¹³ Managing breeding habitats are critical for the survival of sage-grouse populations (Connelly, Schroeder, Sands, & Braun, 2000). This constraint would aid in managing livestock grazing to maintain healthy, residual cover of herbaceous understory vegetation to reduce predation during the critical nesting and early brood-rearing stages, in addition to preventing direct trampling and disturbance of nests, eggs, and incubating females. Nesting and early brood-rearing habitat use period dates are derived from Table 5-2 in the Conservation plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee, 2006).

¹⁴ Livestock have been shown to have high estimated rates of trampling on simulated salmonid redds (Gregory & Gamett, 2009). Models of redd trampling by livestock has been shown to cause large increases in egg-to-fry mortality that could lead to undesirable population-level effects (i.e., reduced population growth rates), especially in populations with limited demographic resilience (Peterson, Rieman, Young, & Brammer, 2010). This constraint would aid in managing spawning habitat by reducing trampling of redds and significantly increasing egg-to-fry survival (BLM 2013). Spawning and egg incubation core-period dates are derived from Table F-1 in Idaho DEQ (2002) and modified by information for local populations (Schill, Mamer, & Elle, 2004).

¹⁵ One of the most important factors in the demography of Columbia spotted frogs is survival of the young (i.e., eggs, larvae, and metamorphs) (Patla & Keinath, 2005). Livestock have been shown to disturb and break apart fragile egg masses (Engle, 2000), (USDI USFWS, 2013) and cause direct mortality to larvae and young metamorphs (Maxwell, 2000). This constraint would aid in managing breeding habitat by reducing disturbance to egg masses and mortality of eggs and larvae due to livestock trampling. Although dates may vary among years depending on temperatures and snowmelt, the core-period dates of egg deposition and emergence of larvae are derived from Patla and Keinath (2005) and modified by information for local populations (Lohr & Haak, 2009) (Lohr & Haak, 2010) (Lohr, 2011) (USDI USFWS, 2013).

¹⁶ Mountain big sagebrush sites are present at higher elevation and in areas that receive greater effective annual precipitation than Wyoming big sagebrush and basin big sagebrush sites. The combined higher elevation, with cooler temperatures through the growing season and greater annual effective precipitation, extends the growing season for sites dominated by mountain big sagebrush compared to the other two subspecies.

- no more than 1 year of grazing use during the active growing season (May 1 to June 30) would be scheduled in any consecutive 3-year period¹⁷;
- OR**
- no more than 2 years of grazing use during the active growing season would be scheduled in any consecutive 3-year period when 30 or fewer days¹⁸ of use occurs during the active growing season and the intensity of use is held to less than 41 percent¹⁹ utilization at the end of the active growing season;
- OR**
- no more than 2 years of grazing use during the active growing season would be scheduled in any consecutive 3-year period during the active growing season when more than 30 days of grazing use occurs during the active growing season and the intensity of use that occurs during the active growing season is held to less than 21 percent utilization at the end of the active growing season.
- When the mean elevation of the pasture is greater than 5,000 feet,
 - no more than 1 year of grazing use during the active growing season (May 1 to July 15) would be scheduled in any consecutive 3 year period;
 - OR**
 - no more than 2 years of grazing use during the active growing season would be scheduled in any consecutive 3-year period when 30 or fewer days of use occurs during the active growing season and the intensity of use is held to less than 41 percent utilization at the end of the active growing season;
 - OR**
 - no more than 2 years of grazing use during the active growing season would be scheduled in any consecutive 3-year period during the active growing season when more than 30 days of grazing use occurs during the active growing season and the intensity of use that occurs during the active growing season is held to less than 21 percent utilization at the end of the active growing season.
- Soils:

Mountain big sagebrush generally begins growth approximately two weeks after Wyoming and basin big sagebrush (Johnson 2000). The delay in the growing season would be more dramatic as elevation increases and mountain big sagebrush ecological sites replace Wyoming and basin big sagebrush ecological sites. Similarly, co-dominant native bunchgrass species associated with mountain big sagebrush ecological sites respond with a phenological delay as elevation increases (see Appendix E, which contains information on the relationship between elevation and the phenological development of key bunchgrass species present in the Owyhee Field Office). GIS analysis of the relationship between ecological site descriptions dominated by these three big sagebrush subspecies reveals that within the Owyhee 68 groups 3-5 allotments, no sites classified within the Wyoming or basin big sagebrush ecological site descriptions occur above 5000 feet elevation. Analysis also shows a zone between 4,000 and 5,000 feet elevation with scarce representation of Wyoming and basin big sagebrush sites. Use of 5,000 feet elevation as a transition point for an extended active growing season for upland vegetation communities is supported by the delay in the phenological development of plant communities within the project area.

¹⁷ A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long (Stoddart, 1946); (Blaisdell & Pechanec, 1949); (Mueggler W. F., 1972); (Mueggler W. F., 1975); (Miller, Seufert, & Haferkamp, 1994); (USDA NRCS, 2012); (Burkhardt & Sanders, 2010); (Anderson, 1991). Some of these sources suggest this deferment or rest occur as frequent as two of every 3 years or more often. Flexibility would be provided in the development of grazing schedules under alternative three by limiting the duration and intensity of grazing use during the active growing season when use is schedule more frequent than one of 3 years during the active growing season.

¹⁸ Reed et.al. (Reed, Roath, & Bradford, 1999), in providing a grazing response index, identified the frequency of grazing while plants are actively growing, in addition to the intensity of use and opportunity for plants to grow prior to grazing or regrow after grazing has occurred, as factors that contribute toward repeated, selective use of the best, most palatable plants; overgrazing. These authors provided a citation concluding that seven to 10 days are required for a plant to grow enough to be grazed again.

¹⁹ Utilization levels would be assessed, as determined by the key forage plant method, at the end of the growing season for key species and before plant senescence. The light level is a class of utilization between 21 and 40 percent whereas the slight level is a class of utilization between 5 and 20 percent. The constraint is consistent with ORMP management action number 4 under the Livestock Management Objective LVST 1; limiting impacts to vigor and health of perennial bunchgrasses during the active growing season.

- When the mean elevation of the pasture is less than 5,000 feet, no more than 2 years of use would be scheduled during periods of high soil moisture for low elevations (March 1 to May 15)²⁰ in any consecutive 3-year period.
- When the mean elevation of the pasture is greater than 5,000 feet, no more than 2 years of use would be scheduled during periods of high soil moisture for high elevations (March 1 to May 31)²¹ in any consecutive 3-year period.
- Riparian:
 - When the mean elevation of the pasture is less than 5,000 feet (see vegetation rationale for elevation breaks), no more than 2 years of use June 15 to September 30²² is scheduled in any consecutive 3 year period
 - When the mean elevation of the pasture is greater than 5,000 feet, no more than 2 years of use July 1 to September 30 is scheduled in any consecutive 3 year period
 - Where the indicator is appropriate²³, and when grazing occurs more than 1 in 3 years during the specified time constraint period, limit the intensity of use to (measured at the end of the riparian growing season in key riparian areas²⁴):
 - Stubble height no less than 6”²⁵
 - Woody browse use no greater than 30 percent incidence of use on most recent year’s lead growth²⁶
 - Bank alteration no greater than 10 percent²⁷

2.2.4 Alternative 4

Under Alternative 4, grazing permits for the 20 allotments of the Toy Mountain Group allotments would be renewed with actions (terms and conditions) that emphasize limiting the frequency of grazing use during seasons when impacts to identified resources are greatest. Limits on critical seasons of grazing use under Alternative 4 would also limit the intensity and duration of grazing during those periods. Limitation would constrain use to a degree necessary to meet, make significant progress toward meeting, or maintain all Standards and the ORMP objectives within pastures where identified resources are present. In addition, Alternative 4 would implement actions that protect and enhance high-value resources (e.g., perennial or extensive riparian resources, special status species habitats, resources associated with special management areas).

²⁰ A number of sources (Laycock & Conrad, 1967) (Warren, Thurow, Blackburn, & Garza, 1986) (Eldridge S. , 2004) (Bilotta, Brazier, & Haygarth, 2007) suggest limitations for grazing on wet or saturated soils due to increases in physical impacts of compaction and pugging (plunging hoofs into wet soil, forming a void). This is based on the principle that the resistance of a soil to deformation declines as soil moisture increases and therefore the greatest amount of soil damage occurs when livestock tread on wet soils. When livestock are removed from the pasture during these high risk times, damage to soils and vegetation will be limited.

²¹ Extended deferred period is due to elevated soil moisture retention and delayed snow melt that increase with elevation it coincides with upland perennial vegetation constraints that serve as a proxy and reflect changes in precipitation and temperature. The constraint is consistent with ORMP management objective SOIL 1 - limiting impacts to watershed health/condition and associated management actions of providing adequate amounts of ground cover to support proper infiltration, maintain soil moisture, stabilize soils, and maintain site productivity.

²² Many sources discuss the impacts of livestock grazing in riparian areas and to stream channels during the summer months: (Bailey & Brown, 2011); (Green & Kauffman, 1995); (Belsky, Matzke, & Uselman, 1999); (Liggins, 1999) (Stevens, McArthur, & Davis, 1992); (Clary, 1995).

²³ For example: bank alteration may not be necessary where a stream is rock armored, woody browse is NA when there is not a woody component (at the discretion of the Owyhee Field Office).

²⁴ Key riparian areas for intensity monitoring may include the locations of established DMAs and other locations that fit the definition of a key area provided in BLM Technical Reference 1737-23 or 1737-15; Key areas may be cooperatively chosen by Owyhee Field Office specialists, permittees, and other interested public.

²⁵ Stubble height technique as described in the Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation* (USDI BLM 2011).

²⁶ Woody species use technique as described in the Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation* (USDI BLM 2011)

²⁷ Bank Alteration technique as described in the Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation* (USDI BLM 2011)

Actions of Alternative 4 would provide for additional resistance and resilience following disturbance and changing condition, as well as additional protective measures for resource values in the landscape to ensure long-term sustainability. These additional protective measures would be provided by more frequently implementing actions that limit grazing use during seasons when impacts to identified resources are greater than would occur under Alternative 3 and would not be as dependent on limiting the intensity of use that is a part of grazing use flexibility in Alternative 3.

Constraints used to develop Alternative 4 actions are one set of actions that will allow progress toward meeting or maintaining Standards and ORMP objectives. Similarly, these constraints are one set of actions that provide additional protection of high-value resources. Constraints to seasons, intensity, duration, and/or frequency of grazing use meet objectives and to protect and enhance high-value resources would be applied specific to pastures where the following resources are present:

- Special status species:
 - No more than 1 year of use in any consecutive 3-year period during sage-grouse pre-laying/lekking season (March 1 to March 31)²⁸ when an occupied and/or active lek occurs within the pasture or the pasture occurs within PPH-Key habitat and a 75 percent BBD area
 - No more than 1 year of use in any consecutive 3 year period during sage-grouse nesting/early brood-rearing season (April 1 to June 30)²⁹ when PPH occurs in the pasture
 - No more than 1 year of use in any consecutive 3-year period during sage-grouse late brood-rearing/summer season (July 1 to August 31)³⁰ within PPH-Key habitat and the local population's summer range occur in the pasture *and* the pasture is not meeting Standard 8 due to sage-grouse upland summer or summer riparian habitat
 - No more than 1 year of use in any consecutive 3-year period during spawning season (March 15 to June 15)³¹ when occupied redband trout streams occur on BLM lands in the pasture
 - No more than 1 year of use in any consecutive 3-year period during breeding (egg mass stage) season (May 1 to June 15)³² when the pasture contains potential habitat (i.e., lentic areas, perennial streams) and occurs in occupied Columbia spotted frog watersheds

²⁸ Managing breeding habitats are critical for the survival of sage-grouse populations (Connelly, Schroeder, Sands, & Braun, 2000). This constraint would aid in managing livestock grazing to provide healthy and abundant herbaceous understory vegetation to improve the condition of pre-laying females and provide nesting cover during the breeding season, in addition to preventing displacement of sage-grouse from leks. Lekking and early breeding habitat use period dates are derived from Table 5-2 in the Conservation plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee, 2006).

²⁹ Managing breeding habitats are critical for the survival of sage-grouse populations (Connelly, Schroeder, Sands, & Braun, 2000). This constraint would aid in managing livestock grazing to maintain healthy, residual cover of herbaceous understory vegetation to reduce predation during the critical nesting and early brood-rearing stages, in addition to preventing direct trampling and disturbance of nests, eggs, and incubating females. Nesting and early brood-rearing habitat use period dates are derived from Table 5-2 in the Conservation plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee, 2006).

³⁰ Because areas with relatively moist conditions and abundant succulent forbs are typically limited across the landscape in mid to late summer, managing late brood-rearing/summer habitats is important for recruitment of immature sage-grouse into the adult population. This constraint would aid in managing livestock grazing to provide abundant succulent herbaceous vegetation (i.e., perennial forbs and bunchgrasses) for forage and concealment cover to improve the survival and condition of immature sage-grouse during the late brood-rearing/summer season. Late brood-rearing/summer habitat use period dates are derived from Table 5-2 in the Conservation plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee, 2006).

³¹ Livestock have been shown to have high estimated rates of trampling on simulated salmonid redds (Gregory & Gamett, 2009). Models of redd trampling by livestock has been shown to cause large increases in egg-to-fry mortality which could lead to undesirable population-level effects (i.e., reduced population growth rates), especially in populations with limited demographic resilience (Peterson, Rieman, Young, & Brammer, 2010). This constraint would aid in managing spawning habitat by reducing trampling of redds and significantly increasing egg-to-fry survival (BLM 2013). Spawning and egg incubation core-period dates are derived from Table F-1 in Idaho DEQ (2002) and modified by information for local populations (Schill, Mamer, & Elle, 2004)

³² One of the most important factors in the demography of Columbia spotted frogs is survival of the young (i.e., eggs, larvae, and metamorphs) (Patla & Keinath, 2005). Livestock have been shown to disturb and break apart fragile egg masses (Engle, 2000), (C. Mellison, pers. comm., 2013) and cause direct mortality to larvae and young metamorphs (Maxwell, 2000). This constraint would aid in managing breeding habitat by reducing disturbance to egg masses and mortality of eggs and larvae due to livestock trampling. Although dates may vary among years depending on temperatures and snowmelt, the core-period dates of egg deposition and emergence of larvae are derived from Patla and Keinath (2005) and modified by information for local populations (Lohr & Haak, 2009) (Lohr & Haak, 2010) (Lohr K., 2011); K. Lohr pers. Comm. 2013).

- Upland Perennial Vegetation³³:
 - When the mean elevation of the pasture is less than 5,000 feet, no more than 1 year of use would be scheduled during the active growing season for low elevations (May 1 to June 30) in any consecutive 3-year period.
 - When the mean elevation of the pasture is greater than 5,000 feet, no more than 1 year of use would be scheduled during the active growing season for high elevations (May 1 to July 15) in any consecutive 3-year period.
- Soils:
 - When the mean elevation of the pasture is less than 5,000 feet, no more than 1 year of use would be scheduled during periods of high soil moisture for low elevations (March 1 to May 15)³⁴ in any consecutive 3-year period.
 - When the mean elevation of the pasture is greater than 5,000 feet, no more than 1 year of use would be scheduled during periods of high soil moisture for high elevations (March 1 to May 31)³⁵ in any consecutive 3-year period.
- Riparian:
 - When the mean elevation of the pasture is less than 5,000 feet (see vegetation rationale for elevation breaks), no more than 1 year of use June 15 to September 30 would be scheduled in any consecutive 3 year period
 - When the mean elevation of the pasture is greater than 5,000 feet, no more than 1 year of use July 1 to September 30 would be scheduled in any consecutive 3 year period
 - When 1.0 or more mile(s) of perennial streams occur in a pasture per NHD and the pasture contains streams that were identified by the Idaho Department of Fish and Game as being within the range of redband trout, no use during mid-summer (dates dependent on elevation; see above) would be scheduled in all years³⁶

High-value resources defined by the above Alternative 4 constraints occur where:

- Sage-grouse pre-laying/lekking habitats are present,
- Sage-grouse late brood-rearing/summer habitats are present, or
- One or more mile(s) of perennial streams occur in a pasture per NHD and the pasture contains streams that were identified by the Idaho Department of Fish and Game as being within the range of redband trout.

³³ A number of sources suggest limiting the frequency of grazing use of bluebunch wheatgrass during the active growing season to no more than one of 3 (Stoddart, 1946); (Blaisdell & Pechanec, 1949); (Mueggler W. F., 1972); (Mueggler W. F., 1975); (Miller, Seufert, & Haferkamp, 1994); (USDA NRCS, 2012); (Burkhardt & Sanders, 2010) (Anderson, 1991);.

³⁴ A number of sources (Laycock & Conrad, 1967) (Warren, Thurow, Blackburn, & Garza, 1986) (Eldridge S. , 2004) (Bilotta, Brazier, & Haygarth, 2007) suggest limitations for grazing on wet or saturated soils due to increases in physical impacts of compaction and pugging (plunging hoofs into wet soil, forming a void). This is based on the principle that the resistance of a soil to deformation declines as soil moisture increases and therefore the greatest amount of soil damage occurs when livestock tread on wet soils. When livestock are removed from the pasture during these high risk times, damage to soils and vegetation will be limited.

³⁵ Extended deferred period is due to elevated soil moisture retention and delayed snow melt that increase with elevation; it coincides with upland perennial vegetation constraints that serve as a proxy and reflect changes in precipitation and temperature. The constraint is consistent with ORMP management objective SOIL 1 - limiting impacts to watershed health/condition and associated management actions of providing adequate amounts of ground cover to support proper infiltration, maintain soil moisture, stabilize soils, and maintain site productivity.

³⁶ An analysis was performed to attain the range of perennial stream (per NHD) by pasture; 64 of the 123 pastures contain perennial streams (0.02-9.66 mile), and 30 percent of them have less than 1.0 mile of perennial stream. In other words, 6 percent or 9.5 miles of the total perennial miles (152.8) occur in reaches of less than 1.0 mile by pasture. These pastures were eliminated from the added constraints (19 pastures were eliminated). Additionally, if a pasture did not also have redband trout (RBT) range identified by Idaho Fish and Game, the pasture was eliminated (8 additional pastures eliminated). Thus, the added constraints would apply to 37 pastures within the Group 3-5 allotments (see the project record for further detail).

2.2.5 Alternative 5 – No Grazing

Under Alternative 5 – No Grazing, no livestock grazing permit would be offered for a term consistent with the maximum term of a grazing permit defined in regulation (10 years).

2.2.6 Preferred Alternative

The preferred alternative is the result of assigning management prescriptions in a way designed to meet the resource needs of each individual allotment. This preferred alternative, therefore, is a composite of the action alternatives that are analyzed in this EA, because no individual alternative analyzed is expected to provide the resource benefits for all 20 allotments that BLM was seeking. This preferred alternative is summarized in Table PREF-1 below.

Table PREF-1: Preferred Alternatives by allotment

Allotment Name	Preferred Alternative
Alder Creek FFR (0639)	Alternative 4
Boone Peak (0589)	
Box T (0534)	Alternative 3
Bridge Creek (0590)	
Browns Creek (0585)	Alternative 3
Garrett FFR (0626)	Alternative 3
Hart Creek (0532)	Alternative 4
Josephine FFR (0458)	Alternative 2
Lone Tree (0587)	Alternative 4
Louisa Creek (0601)	Alternative 3
Meadow Creek FFR (0491)	Alternative 2
Moore FFR (0606)	Alternative 3
Munro FFR (0461)	Alternative 2
Quicksilver FFR (0483)	
Red Mountain (0588)	
Stahle FFR (0641)	
Steiner FFR (0613)	Alternative 2
Toy (0533)	Alternative 3
West Castle (0648)	Alternative 4
Whitehorse/ Antelope (0541)	Alternative 4

Allotment Name	Preferred Alternative
Fossil Creek	Alternative 3
Red Hill FFR	Alternative 3
Picket Creek	Alternative 3

2.3 Alternatives Considered but Not Analyzed in Detail

Grazing permit renewal with current terms and conditions (Alternative 6)

The renewal of the grazing permit with the same terms and conditions as the current permits is the equivalent of a no-action alternative and was considered but not analyzed. In accordance with the BLM NEPA Handbook (H-1790-1), the no-action alternative for externally generated proposals or applications is generally to reject the proposal or deny the application. The sole exception to this is for renewal of a grazing permit, for which the no-action alternative is to issue a new permit with the same terms and conditions as the expiring permit. As noted in the BLM NEPA Handbook, an alternative that documents the current and future state of the environment can be used to compare the effects brought about by the proposed action or alternatives.

Often, the livestock management practices implemented in recent years and that have resulted in documented resource conditions differ to some degree from terms and conditions of the current permit. As a result, analysis of an alternative that lists terms and conditions of the current grazing permit does not serve a purpose when recent livestock management practices do not closely follow the terms and conditions of the current grazing permit. This EA analyzes the effects of an alternative (Alternative 1 – Current Situation) that reflects livestock management actions that have been recently implemented, rather than an alternative that would renew the grazing permits with terms and conditions unchanged, to provide the baseline for analysis that documents the current and future state of the environment in the absence of action.

As a result, a no-action alternative or renewing the permit without changes is not analyzed in detail. When the current situation for any of the 20 allotments in the Toy Mountain Group closely matched the terms and conditions of the existing permit, the current-situation alternative is equivalent to the current permit terms and conditions or a no-action alternative.

New Rangeland Projects (Alternative 7)

A number of applications received for permit renewal identify rangeland improvement projects³⁷ (usually fences or water developments) that would modify existing projects or propose the construction of new projects. Though rangeland projects are one of a number of tools available to meet land health standards and/or resource objectives, BLM did not consider such proposals in detail for the following reasons³⁸:

- BLM limited the action to renewing grazing permits using existing infrastructure on the allotments at issue, and thus requests to build new infrastructure do not meet the purpose and need for this action.
- Although the Owyhee Resource Management Plan recognizes that rangeland projects have the potential to assist BLM in meeting management objectives in some situations, the ORMP states, “Use a minimal level of rangeland developments (e.g., fences, water facilities) to adjust livestock grazing practices to achieve multiple use resource objectives and meet standards for rangeland health (RMP/ROD at 24)”. This language identifies range improvements as only one tool among many that can be used to implement appropriate livestock management practices.
- A variety and considerable number of range improvement projects such as spring developments, fences, reservoirs, storage tanks, and troughs have already been constructed across the allotments

³⁷ Range improvement means an authorized physical modification or treatment which is designed to improve production of forage; change vegetation composition; control patterns of use; provide water; stabilize soil and water conditions; restore, protect and improve the condition of rangeland ecosystems to benefit livestock, wild horses and burros, and fish and wildlife. The term includes, but is not limited to, structures, treatment projects, and use of mechanical devices or modifications achieved through mechanical means (43 CFR 4100.0-5).

³⁸ Information specific to each allotment and project proposed in permit renewal applications is provided in Section 2.4 of this EA.

to aid in livestock grazing management. For example, there are approximately 123 fence projects, 36 spring developments, and 14 reservoirs in place on public land in the Group 3 allotments³⁹. The BLM ID team decided to rely on additional means to improve rangeland health and meet RMP objectives in this permit renewal process, including varying the seasons of use for grazing, adjusting the timing and intensity of use, and also by considering adjustments to stocking rates.

- The BLM is preparing an RMP-amending Environmental Impact Statement that considers alternative strategies to protect greater sage-grouse in Idaho and southwestern Montana; consequently, the Owyhee Field Office is reluctant to approve new range improvement projects in sage-grouse habitat⁴⁰.
- BLM Washington Office Instruction Memorandum 2012-043 provides interim conservation policies and procedures to the field offices to be applied to ongoing and proposed authorizations and activities that affect greater sage-grouse and its habitats while the sub-regional RMP amendment process is underway. The guidance is in effect until the BLM develops and decides how to best incorporate long-term conservation measures for greater sage-grouse into applicable land use plans. Proposed fences are addressed with the following guidance:

Evaluate the need for proposed fences, especially those within 1.25 miles of leks that have been active within the past 5 years and in movement corridors between leks and roost locations. Consider deferring fence construction unless the objective is to benefit Greater Sage-Grouse habitat, improve land health, promote successful reclamation, protect human health and safety, or provide resource protection. ---

Similarly, water developments are addressed with the following guidance:

NEPA analysis for all water developments must assess impacts to Greater Sage-Grouse and its habitat. Install escape ramps and a mechanism such as a float or shut-off valve to control the flow of water in tanks and troughs. Design structures in a manner that minimizes potential for production of mosquitos which may carry West Nile virus.

As a result, the complexity of considering and analyzing proposed projects during grazing permit renewal is heightened pending the identification of long-term conservation measures for greater sage-grouse in the amendment to the Owyhee Resource Management Plan not yet completed.

- Inventories and surveys would be necessary to fully and appropriately analyze and disclose the direct, indirect, and cumulative impacts associated with new or modified infrastructure projects. The limited time available in order to meet the terms of June 26, 2008, Order Approving Stipulated Settlement Agreement makes it difficult to complete the analysis of project modification and/or construction. There simply is no time to conduct the necessary site-specific inventories and surveys of resources affected by infrastructure projects.
- The project proposals received often fail to identify the way in which they would facilitate significant progress toward, or the attainment of, rangeland health standards. While many of the proposed projects appear to facilitate livestock production, the majority appear to have a limited

³⁹ Source: Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement, Table LVST-4

⁴⁰ 2005BLM Land Use Planning Handbook H-1601-1, Status of Existing Decisions During the Amendment or Revision Process: During the amendment or revision process, the BLM should review all proposed implementation actions through the NEPA process to determine whether approval of a proposed action would harm resource values so as to limit the choice of reasonable alternative actions relative to the land use plan decisions being reexamined. Even though the current land use plan may allow an action, the BLM manager has the discretion to defer or modify proposed implementation-level actions and require appropriate conditions of approval, stipulations, relocations, or redesigns to reduce the effect of the action on the values being considered through the amendment or revision process. The appropriate modification to the proposed action is subject to valid existing rights and program-specific regulations. A decision to temporarily defer an action could be made where a different land use or allocation is currently being considered in the preferred alternative of a draft or proposed RMP revision or amendment. These decisions would be specific to individual projects or activities and must not lead to an area-wide moratorium on certain activities during the planning process (H-1601-1 at 47).

relationship to the grazing management practices needed to meet or make progress toward meeting rangeland health standards, conform to guidelines, or meet management objectives.

- The projects proposed provided insufficient site-specific information (locations, engineering specifications, etc.) for BLM to fully analyze the improvements.
- Funding availability for range improvements in years past was much more reliable and predictable than it is currently. The 2011 Budget Control Act and impending budget reductions give the Department of Interior and BLM unprecedented challenges in anticipating what level of funding will be available for all programs, including range improvement projects for livestock grazing in the years ahead. Because of these funding uncertainties, approving range improvements in concept now provides no assurance that their construction on the ground would be realized in the foreseeable future.
- BLM's regulations for grazing administration specific to the standards and guidelines (43 CFR 4180.2) require that the authorized BLM officer, upon determining existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines, take appropriate action as soon as practicable but not later than the start of the next grazing year. Considering the time required for project design, completion of site specific surveys and NEPA analysis, plus construction time, it is unlikely that the authorized officer could take the required appropriate action prior to the start of the next grazing year. It would be most likely that these projects could not be completed in time, and would therefore require interim actions to be taken while projects were still in various stages of analysis and construction. Even these interim actions could require another layer of NEPA analysis before implementation, further delaying progress toward improving rangeland conditions.
- Although BLM excluded range improvements from this permit renewal process for the above reasons, this is not intended to preclude proposals for range improvement projects that directly address rangeland health standards, ORMP objectives, and issues relating to protection of BLM sensitive species such as sage-grouse. Permittees are still encouraged to submit applications for range improvement projects outside the current permit renewal process, and the BLM will take a close look at the merit of these proposals within the context of any budgetary constraints at the time.

Wildfire Fuels (Alternative 8)

Wildfire is a natural event that defines a range of variability in potential vegetation communities of sagebrush steppe vegetation types. Wildfire behavior is dependent on a number of factors, including climatic conditions and current weather, as well as the size and connectivity of fuels, fuel loading, fuel moisture, and topographic slope. In the absence of actions that significantly alter fuel loading, wildfire spread rates for grass fuel types and grass/shrub fuel types are similar. Models for the rate of spread in these fuel types follow similar curves for low fuel load and moderate fuel load and differ most at the extremes of fuel moisture and wind speed (USDA USFS, 2005).

Invasive annual grasses have been shown to alter wildfire behavior. Knapp (1996) reviewed the history, persistence, and influences to human activities of cheatgrass dominance in the Great Basin desert and noted that changes in density of cheatgrass have led to commensurate changes in fire frequency. Further, fires have shown a tendency to occur repeatedly within cheatgrass-dominated areas. Balch et al. (2012) found that cheatgrass-dominated lands had a shorter fire-return interval, were disproportionately represented in the larger fires, were significantly more likely to have been the ignition point for fires, and showed a strong inter-annual response to wet years in comparison to other prominent land cover classes across the Great Basin.

Livestock grazing has been identified as a potential underutilized tool in assisting managers to achieve fuels and vegetation management objectives. A number of sources suggest that livestock grazing could minimize wildfire impacts to high priority areas (Great Basin Restoration Initiative Workgroup, 2010) (Davies, Bates, Svejar, & Boyd, 2010) (Diamond, Call, & Devoe, 2009) (Taylor, Jr., 2006). The Governor's Federal alternative for greater sage-grouse management in Idaho states, "The unintended consequences of altering grazing use, such as possible increased risk of wildfire, must be carefully considered in any management proposal" (The State of Idaho, 2012). The following discussion of the value and consequences of using landscape-scale and targeted livestock grazing to manage fuels is provided in the context of the purpose and need for this NEPA document, renewal of grazing permits consistent with meeting the Idaho S&G, and the ORMP objectives.

Following a series of large wildfires in south-central Idaho and northern Nevada in 2007, a team of scientists, habitat specialists, and land managers examined initial information pertaining to plant communities and patterns of livestock grazing, as they related to fuel loads and fire behavior. Many vegetation communities affected by the 2007 fires are similar to sagebrush steppe within the Toy Mountain Group allotments. The team concluded that much of the area involved in these fires burned under extreme fuel and weather conditions that likely overshadow livestock grazing as a factor influencing fine fuels and thus fire behavior. One finding was that fire behavior in sagebrush vegetation types is driven by sagebrush cover and height, with the herbaceous component on which livestock focus their grazing playing a lesser role. Consequently, opportunities to influence fire behavior through livestock grazing are greatest in grassland vegetation types compared to shrub-grasslands. Secondly, the potential effects of grazing on fire behavior are highly dependent on weather, fuel load, and fuel moisture conditions.

Grazing applied at sustainable utilization levels would have limited or negligible effects on fire behavior when fuel moisture and weather conditions are extreme. When weather and fuel moisture conditions are less extreme, grazing may reduce the rate of spread and intensity of fires allowing for more patchy burns with lower fuel consumption levels. The team further identified the use of targeted grazing programs on specific areas as greater opportunities when livestock can affect fire behavior through reduction in fine fuels on semi-arid rangelands, as opposed to landscape-scale grazing that is not strategic (USDI USGS, 2008).

Targeted grazing is the application of a specific kind of livestock at a determined season, duration, and intensity to accomplish defined vegetation or landscape goals. The major difference between good grazing management and targeted grazing is that targeted grazing refocuses outputs of grazing from livestock production to vegetation and landscape enhancement (Launchbaugh & Walker, 2006). Some recent applications of targeted grazing have included control of noxious weeds, control of competing vegetation in agroforestry, and the establishment and maintenance of fuel breaks. Targeted grazing is one of a number of tools available for constructing desirable ecosystems. Targeted grazing should be used in combination with other technologies to meet vegetation management objectives, with consideration for economic, ecological, and social implications.

Sheep and goats have been identified as livestock more conducive to fuels reduction in vegetation types with a shrub component, compared to cattle. Although woody species are a greater portion of the selected diet of sheep and goats, intensive livestock management, including protein and energy supplements, increases consumption of shrubs (Taylor, Jr., 2006). Terms and conditions of existing permits to graze livestock in the Group 3 allotments do not include grazing by sheep or goats, nor did any application for permit renewal include a desire to graze sheep or goats in these allotments. All existing grazing use authorized is by cattle, unchanged in applications received. As a result, the indirect consequences of reducing the shrub component of fuels have limited application to grazing permit renewal in the Group 3 allotments.

A number of sources, in addition to the USGS (2008) report following the Murphy Complex fires, have identified the utility of targeted livestock grazing as one of a number of tools that can be used in an integrated plan to establish and maintain fuel breaks, rather than landscape-scale livestock grazing to reduce fuel loads (Great Basin Restoration Initiative Workgroup, 2010) (University of Nevada Cooperative Extension, 2007) (Taylor, Jr., 2006). In addition to the emphasis on site-specific targeted grazing to provide fuel breaks, these sources and other citations listed above have consistently noted that grazing as a fuels management tool is primarily limited to grassland-dominated vegetation types. Many of these sources recognize the need to ensure that prescriptions for reduction in fine fuels through targeted grazing before the fire season do not also reduce the health and vigor of perennial herbaceous species during the active growing season, do not impair watershed function, or do not limit the ability to meet other resource objectives on a landscape scale. The adverse effect on these resources in small areas to meet targeted grazing prescriptions that establish and maintain linked fuel breaks needs to be considered against a goal of minimizing impacts of wildfire to large areas of intact habitat (Great Basin Restoration Initiative Workgroup, 2010) (USDI USGS, 2008).

The Policy Analysis Group for the College of Natural Resources of the University of Idaho (University of Idaho, 2011) provided information on policy options related to wildfire management and fuels treatments on Idaho's rangelands. The report summarized the potential benefits and detrimental effects of a number of tools, including livestock grazing. Although the group's report did not recommend an alternative, it focused on landscape-scale treatments and identified livestock grazing as an effective tool to reduce fuel loading. In addition, the report included information on potential adverse impacts from grazing treatments for fuels reductions, the same impacts that are identified in a number of other sources. Like those other sources, the report identified livestock grazing as a complex and dynamic tool with many plant and animal variables.

The role of targeted grazing to manage fuels, compared to traditional grazing authorizations by permit or lease, is discussed in the Great Basin Restoration Initiative Workgroup's report (2010). Although targeted livestock grazing to reduce fuels within strategic strips or zones can help reduce wildfire impacts, accomplishing this goal is a formidable challenge given the many climatic, biological, wildfire behavior, and livestock management variables that may affect the outcome. The option and benefits of using stewardship contracting are discussed. The report suggests that targeted fuels management is best addressed in a fire management plan that can integrate all wildland fire management guidance, direction, and activities to implement national fire policy and fire management direction from the resource management plan. Taylor (2006) also identified that planning for use of livestock grazing for fuels management needs to consider the integration of additional fuels management tools. Livestock grazing actions for fuels management involve a shift in purpose from providing an opportunity for a use of public lands to meet a permittee's livestock production objectives to a purpose of meeting vegetation or fuels management objectives.

Diamond, Call, and Devoe (2009) found that targeted, or prescribed, cattle grazing that removed 80 to 90 percent of cheatgrass biomass during the growing season was an effective tool to reduce flame length and rate of spread of fire during the following fire season, especially when combined with late summer prescribed fire treatment and the same grazing treatment in the following year. Few rangeland managers, including the authors in the final sentence of the article, would suggest that native perennial herbaceous species could be maintained, let alone improved, with this series of livestock grazing and prescribed fire treatments. In addition, site stability and watershed function would likely be jeopardized with consecutive years of herbaceous utilization at these levels and frequent prescribed burning. Ecological objectives should be included as a part of the overall strategy of targeted grazing to reduce fuel loading (Taylor, Jr., 2006). Utilization levels of 50 to 60 percent on crested wheatgrass were effective in creating a patchy burn in the Murphy Complex fires (USDI USGS, 2008). In addition, contracted sheep grazing has been

used by the Boise District Bureau of Land Management to establish and maintain narrow fuel breaks in the wildland-urban interface. The BLM has and will continue to develop plans to create fuel breaks that provide firefighters an additional tool in managing wildland fire. Livestock grazing will continue to be a tool available to establish and maintain strategically located fuel breaks.

A review of the literature related to livestock grazing effects on fuel loads in sagebrush ecosystems by Strand and Launchbaugh (2013) identified the potential applications of livestock grazing in fuels management similar to those identified above. These authors identified the role of introduced annual species in altered fire regimes, the potential for reducing fine fuels through livestock grazing, the appropriate timing of grazing treatments to reduce herbaceous fuel loads to coincide with peak biomass and the initiation of dormancy, and the fact that under extreme burning conditions, wildland fires are driven by weather conditions rather than by fuel characteristics and that the potential role of grazing on fire behavior is limited.

In conclusion, landscape-scale fuels treatment through livestock grazing has limited application within the sagebrush/bunchgrass vegetation types in the Toy Mountain Group allotments, a landscape with few large or connected areas dominated by annual species or grazing-tolerant introduced perennial grasses. The use of livestock grazing as a fuels treatment in an integrated program is better adapted to fuels planning and contracting (including stewardship contracting) with objectives for vegetation and fuels management, as opposed to administered through the typical grazing permit/lease program that provides an opportunity for permittees to use an available resource to meet their livestock production objectives. Although grazing authorized in the alternatives of this EA will reduce fine fuels, the intensity of grazing necessary to be an effective fuels treatment at the landscape-level and the timing of grazing during the active growing season for native bunchgrass species (May 1 to June 30 at elevations below 5,000 feet, and slightly later at higher elevations) that would be necessary to reduce fuels prior to the typical onset of the fire season (late June to early July) is outside the purpose and need for this permit renewal EA. Additionally, targeted grazing for fuels reduction to establish fuel breaks is outside the purpose and need of this NEPA document, which responds to applications for grazing permit renewal authorizing cattle grazing to meet rangeland health standards and resource management objectives. Therefore, although targeted grazing was considered, it is not included in alternatives analyzed. Analysis of the consequences of livestock grazing on fuels reductions is limited in this NEPA document to the discussion above.

Using livestock grazing as a tool for managing vegetation and fuel loads will be addressed in the Idaho/Southwest Montana Environmental Impact Statement for sage-grouse, a planning effort that will amend relevant BLM resource management plans, including the Owyhee Resource Management Plan. Once the RMPs are amended, renewal of permits for grazing within the Owyhee Field Office, as well as fuels management planning, will incorporate resource objectives and actions according to direction in the amended ORMP.

Reserve Forage Allotments or Temporary Non Renewable (TNR) grazing use (Alternative 9)

The Environmental Protection Agency (EPA) submitted an alternative in February 2012 that would designate allotments to be used temporarily and on a non-renewable basis to allow for rangeland restoration and recovery. There are no allotments in the Toy Mountain Group of allotments that are not already permitted for livestock grazing. To consider a feasible analysis of a forage reserve allotment alternative, there would need to be unused, livestock-allocated allotments in the Group, but such is not the case.

Management Alternatives (Alternative 10)

The following management alternatives were submitted by Western Watersheds Project in April 2012 to BLM for consideration for development of this EA.

The active/passive restoration alternative would include the following actions:

1. Protect remaining relatively intact sagebrush habitats.
2. Enable passive restoration of lands at risk of weed invasion and/or suffering degradation or facing further losses of native species.
3. Provide for active restoration and removal of livestock facilities or roads or end practices that damage important, sensitive and imperiled species' habitats and populations. This includes actions such as removal of fences and water developments, salt/supplement sites, and associated roading or other disturbance.
4. Provide for active restoration of crested wheatgrass seedings and cheatgrass or other exotic species areas.

Active or passive restoration alternatives will not be analyzed in this EA. BLM has developed and considered a reasonable range of alternatives, including a no-grazing alternative, which will be analyzed in this EA. The BLM Boise District Office has a weed management plan in place that includes an active weed management program within the Owyhee Field Office.

A request to designate new ACECs has been considered but will not be analyzed in detail, per Section 202(c) of FLPMA (43 U.S.C.1712), which requires that in developing land use plans (or amending existing plans), the BLM must give priority to designating and protecting areas of critical environmental concern (ACECs). Designation of a new ACEC is a land use planning-level decision that would require an amendment to the existing Owyhee RMP. The BLM is not in the position to include an ORMP amendment in this permit renewal process. Grazing authorization renewal is an implementation-level decision that does not involve changes to an RMP.

Idaho Governor's Sage-grouse Management (Alternative 11)

The following summary of the Governor's Sage-grouse Management Alternative was considered during the Toy Mountain Group allotments EA. Although the BLM eliminated this alternative from detailed study, many concepts and aspects of the alternative are already available to the BLM and have been incorporated into Alternatives 3 through 5 of the EA. These include incorporating habitat characteristics, conducting habitat assessments and priority area assessments, determining achievement of habitat objectives, and monitoring to determine effectiveness. In addition, the Governor's Alternative was intended for the BLM Idaho RMP amendment process, and BLM understood that this alternative would not be applicable at the project level until the RMP amendment process has been completed; and furthermore, only if the selected alternative in the Record of Decision includes the Governor's sage-grouse alternative.

The Idaho Governor's Office of Species Conservation with the unanimous recommendation of the Task Force adopted a designation of a Sage-Grouse Management Area (SGMA) with three distinct management zones: Core Habitat (CHZ), Important Habitat (IHZ) and General Habitat (GHZ). (The BLM recognizes these management areas and have similar habitat zones identified for management of sage-grouse that have been used in the development of the EIS).

Generally, these management zones outline a suite of basic management activities that may, under certain conditions, occur within a given area. In other words, the three management zones within the SGMA represent a management continuum that includes at one end a relatively restrictive approach aimed at

providing a high level of protection to the species within the CHZ, and on the other end, a relatively flexible approach for the GHZ allowing for more multiple-use activities. While the IHZ provides greater flexibility than in the CHZ, the overall quality and ecological importance of the habitat within this zone is more closely aligned with the habitat in the CHZ than in the GHZ.

Allocation to a specific management zone does not mandate or direct the relevant Federal agency to propose or implement any action; rather, the three habitat zones provide an array of permitted and prohibited activities. Activities not specifically addressed by the Alternative are still subject to the allowances and restrictions of the applicable resource management plan.

This alternative only provides special management for sage-grouse on lands managed by the BLM and U.S. Forest Service, and while beneficial to other sage-steppe species, agencies will still have the obligation to analyze other values when considering a proposed action.

The relevant Federal agencies considering these measures as part of environmental analyses, planning updates and ESA listing determinations should recognize that actions on these lands can have direct and indirect impacts on State endowment trust lands managed by the Idaho Department of Lands. Thus, it is important to evaluate sage-grouse management in a comprehensive and holistic manner.

2.4 Allotment-specific Proposed Action and Alternatives

2.4.1 Alder Creek FFR Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Alder Creek allotment, whereas Standard 7 (Water Quality) has been met. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 1, 3, 4, 5, 7, 8, 9, and 12 for several Standards (see Appendix A).

2.4.1.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Alder Creek FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Alder Creek FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Alder Creek FFR allotment would be unchanged from the existing permit with 60 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-1.

Table ALT-1: Permitted grazing use within the Alder FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
60 AUMs	0 AUMs	60 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States

District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-2 and the following numbered items.

Table ALT-2: Mandatory and other terms and conditions of the offered permit to graze livestock within the Alder Creek FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00639 Alder Creek FFR	59	Cattle	12/1	12/31	100	Active	60

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0606 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.1.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Alder Creek FFR allotment in accordance with terms and conditions of the existing permit and as modified by the applications received from Robert Thomas. Although the season of use depicted on the permit would be adjusted to more closely resemble recent actual use, the number of livestock and season of use on the Alder Creek FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Terms and conditions for stubble height, woody browse, utilization, and

stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Alder Creek FFR allotment would be unchanged from the existing permit with 60 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-3.

Table ALT-3: Permitted grazing use within the Alder Creek FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Active Use	Suspension	Permitted Use
60 AUMs	0 AUMs	60 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-4 and the following numbered items.

Table ALT-4: Mandatory and other terms and conditions of the offered permit to graze livestock within the Alder Creek FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00639 Alder Creek FFR	24	Cattle	4/16	6/30	100	Active	60

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0491 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year’s growth.

2.4.1.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Alder Creek FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all

standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-5). While the season of available grazing use authorized and total AUMs used from public lands would be defined, the number of livestock on the Alder Creek FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Alder Creek FFR allotment would be unchanged at approximately 8.8 acres per AUM⁴¹, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-5: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Alder Creek FFR allotment under Alternative 3

Resource	Pasture 1
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15 1 of 3 years
Vegetation	no use 5/1 to 6/30 2 of 3 years*
Soils	no use 3/1 to 5/15 1 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 one out of three years**

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

Permitted grazing use in the Alder Creek FFR allotment would be unchanged from the existing permit with 60 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-6.

Table ALT-6: Permitted grazing use within the Alder Creek FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
60 AUMs	0 AUMs	60 AUMs

The elevation of the Alder Creek FFR allotment ranges from approximately 4,000 feet to more than 6,000 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/16 to 3/31). The dates of available grazing for the Alder Creek FFR allotment, identified in Table ALT-7, would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public and private lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

⁴¹ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.2 acres would be required to support 1 AUM in the Alder Creek FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Alder Creek FFR Allotment: 100 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.2 acres per AUM if the ideal conditions were present in the Alder Creek FFR allotment, the current permit is based on an allotment-wide stocking rate of 8.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Alder Creek FFR allotment.

Table ALT-7: Alder Creek FFR allotment grazing strategy (date when grazing can occur) with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	4/1 to 12/15 * **	7/1 to 12/15 **	4/1 to 6/14; 10/1 to 12/15 *

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/1)

** Riparian intensity of use limited to stubble height no less than 6", woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Alder Creek FFR allotment would be defined as listed in Table ALT-8 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-8: Mandatory and other terms and conditions of the offered permit to graze livestock within the Alder Creek FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00639 Alder Creek FFR	11	Cattle	4/1	12/15	100	Active	60

The following grazing permit terms and conditions specific to the Alder Creek FFR allotment would be included in the permit offered:

1. Dates of availability of the Alder Creek FFR allotment (0639) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Alder Creek FFR allotment (0639) is at permittee's discretion, as long as authorized active use of 60 AUMs from public lands is not exceeded.
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Alder Creek FFR allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.1.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Alder Creek FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the one pasture when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-9). High-value resources present in the one pasture of the Alder Creek FFR allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats, sage-grouse late brood-rearing/summer habitats, and 1.0 or more mile(s) of perennial streams occur in the one pasture.

In addition to defining the season of grazing use authorized, the maximum number of cattle authorized on the Alder Creek FFR allotment, an allotment that includes a high percentage of private land would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁴². Active AUMs authorized on public land within the Alder Creek FFR allotment would be reduced to 52 AUMs, and the stocking rate for public land in the Alder Creek FFR allotment would be approximately 10 acres per AUM⁴³, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-9: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Alder Creek FFR allotment under Alternative 4

Resource	Pasture 1
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31 in 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 in 2 of 3 years
Sage-grouse (late brood-rearing/summer)	no use 7/1 to 8/30 in 2 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15 in 2 of 3 years
Vegetation	no use 5/1 to 6/30 in 2 of 3 years
Soils	no use 3/1 to 5/15 in 2 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 all years*

* Pasture contains high-value riparian/ fish habitat

⁴² Percent public land for the Alder Creek FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁴³ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.2 acres would be required to support 1 AUM in the Alder Creek FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Alder Creek FFR Allotment: 100 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.2 acres per AUM if the ideal conditions were present in the Alder Creek FFR allotment, the current permit is based on an allotment-wide stocking rate of 8.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Alder Creek FFR allotment.

Permitted grazing use in the Alder Creek FFR allotment would be reduced from the existing permit with 60 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT -10.

Table ALT-10: Permitted grazing use within the Alder Creek FFR allotment with implementation of Alternative 4

Active Use	Suspension ⁴⁴	Permitted Use
52 AUMs	0 AUMs	52 AUMs

The elevation of the Alder Creek FFR allotment ranges from approximately 4,000 feet to more than 6,000 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/15 to 3/31). The grazing schedule for the Alder Creek FFR allotment, identified in Table ALT-11, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-11: Alder Creek FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	10/1 to 12/15	10/1 to 12/15	4/1 to 6/14

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Alder Creek FFR allotment would be defined as listed in Table ALT-12 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-12: Mandatory and other terms and conditions of the offered permit to graze livestock within the Alder FFR allotment with implementation of Alternative 4

Allotment	Grazing Rotation Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00639 Alder Creek FFR	1 & 2	69	Cattle	10/1	12/15	30*	Active	52
	3	69	Cattle	4/1	6/14	30*	Active	52

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Alder Creek FFR allotment would be included in the permit offered:

1. Grazing use in the Alder Creek FFR allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Alder Creek FFR allotment for the term of this grazing permit and consistent with the final decision of the authorized officer dated _____ is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

⁴⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 60 AUMs to 52 AUMs would not result in an increase in suspension AUMs.

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.1.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Alder Creek FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 60 AUMs of permitted use in the Alder Creek FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.2 Boone Peak Allotment⁴⁵

Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), and 7 (Water Quality) of the applicable Standards for Rangeland Health are not being met in the Boone Peak allotment. Although significant progress is being made toward meeting Standards 2 and 3, current livestock management practices are contributing toward not meeting Standard 7. Standards 1 (Watersheds), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) are met, whereas Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to the allotment. Current livestock management practices do not conform to the applicable Livestock Grazing Management Guideline 10 for Standard 7 (see Appendix A).

2.4.2.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Boone Peak allotment with the same terms and conditions as those in the existing permits, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 9-year period between 2004 and 2012 has averaged 1,709 AUMs, with a maximum of 2,052 AUMs in 2009 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Rohl Hipwell would be authorized to graze cattle in one pasture of the Boone Peak allotment from June 1 through October 31 with an authorized active use of 2,052 AUMs. Authorized active use in the

⁴⁵ Alternative 1, the existing situation, would continue management of the public lands in the existing Boone Peak allotment as a livestock management unit. Alternatives 2, 3, and 4 would result in the reconfiguration of allotments that Rohl Hipwell is currently authorized to graze cattle in and create the proposed Fossil Creek, Pickett Creek, and Red Hill FFR allotments from the existing Red Mountain, Bridge Creek, Boone Peak, Quicksilver FFR, and Stahle FFR allotments. Livestock management terms and conditions that would be implemented in the proposed Pickett Creek allotment, including the one pasture of the existing Boone Peak allotment, are discussed in the chapter 2 Section and the chapter 3 Section under the existing Red Mountain allotment headings.

Boone Peak allotment would be reduced from 2,092 AUMs in the existing permits to 2,052 AUMs. The elimination of 42 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Boone Peak allotment under Alternative 1 is summarized in Table ALT-13.

Table ALT-13: Permitted grazing use within the Boone Peak allotment with implementation of Alternative 1 – Current Situation

Permittee	Active Use	Suspension ⁴⁶	Permitted Use
Hipwell	2,052 AUMs	782 AUMs	2,834 AUMs

Cattle grazing use in the Boone Peak allotment by Rohl Hipwell has occurred generally consistent with the dates on the permit in recent years. Appendix B includes a summary of actual use reported by the permittee in recent years and indicates the treatments that would be implemented under Alternative 1, a continuation of management practices that have been recently implemented in the Boone Peak allotment. The grazing treatment under Alternative 1 is summarized in Table ALT -14

Table ALT-14: Grazing treatment for the Boone Peak allotment under Alternative 1

Pasture	Hipwell
1	6/1 to 10/31

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-15 and the following numbered items.

Table ALT-15: Mandatory and other terms and conditions of the offered permit to graze livestock within the Boone Peak allotment with implementation of Alternative 1 – Current Situation

Allotment	Permittee	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00590 Boone Peak	Hipwell	680	Cattle	6/1	10/31	60*	Active	2,052

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. Turnout is subject to the Boise District range readiness criteria.
2. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
3. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
4. Changes to the scheduled use require prior approval.
5. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
6. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.

⁴⁶ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,876 AUMs to 2,834 AUMs would not result in an increase in suspension AUMs.

7. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
8. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
9. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
10. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
11. Utilization may not exceed 50% of the current year's growth.
12. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.2.2 Alternatives 2, 3, and 4

As identified in the discussion of Alternative 2, 3, and 4 under the heading for the Red Mountain allotment (Section 2.4.15), BLM would make changes to allotments boundaries under these alternatives that would result from a grouping of pastures where Rohl Hipwell is currently authorized to graze cattle. Pastures 2 and 3 of the existing Red Mountain allotment, the one pasture of the existing Bridge Creek allotment, the one pasture of the existing Boone Peak allotment, and a holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment) would be combined to create the proposed Pickett Creek allotment, consistent with the application received from Rohl Hipwell on June 24, 2011. The Boone Peak allotment would no longer be an allotment administered by the Owyhee Field office, but its public land acreage would be managed as one of four pastures and a holding pasture of the Pickett Creek allotment.

See Section 2.4.15 of this EA for the description of Alternative 2, 3, and 4 actions that would be proposed.

2.4.2.3 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Boone Peak allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 2,876 AUMs of permitted use in the Boone Peak allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.3 Box T Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Box T allotment. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to the allotment. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4,

and 8. Current livestock grazing is not the causal factor for not meeting Standard 7. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 1, 3, 4, 5, 7, 8, 9, and 12 for several Standards (see Appendix A).

2.4.3.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Box T allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 10-year period between 2003 and 2012 has averaged 1,277 AUMs, with a maximum of 1,513 AUMs in 2012 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Robert Thomas would be authorized to graze 253 head of cattle. Authorized active use in the Box T allotment would be reduced from 1,774 AUMs in the existing permit to 1,513 AUMs. The elimination of 261 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Box T allotment under Alternative 1 is summarized in Table ALT-16.

Table ALT-16: Permitted grazing use within the Box T allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ⁴⁷	Permitted Use
1,513 AUMs	605 AUMs	2,118 AUMs

Livestock grazing use in the Box T allotment has occurred in recent years consistent with the cooperatively developed annual schematic of the pasture rotation. Appendix B includes a summary of actual use reported by the permittee in recent years and indicates the treatments that would be implemented under Alternative 1, a continuation of management practices that have been recently implemented in the Box T allotment. One of two typical schedules, with some variation in move dates between pastures, has been followed as listed in Table ALT-17.

Table ALT-17: Typical grazing schedules for the Box T allotment derived from recent reported actual use

Pasture	Year 1	Year 2
1	6/1 to 7/10	6/21 to 7/10
2	7/11 to 9/15	10/21 to 11/30
3	9/16 to 10/31	6/1 to 6/20
4	11/1 to 11/30	7/11 to 10/20

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-18 and the following numbered items.

⁴⁷ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,379 AUMs to 2,118 AUMs would not result in an increase in suspension AUMs.

Table ALT-18: Mandatory and other terms and conditions of the offered permit to graze livestock within the Box T allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00534 Box T	253	Cattle	6/1	11/30	100	Active	1,513

Terms and conditions:

1. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0534 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Early use (March 1 to March 31) may be authorized on an annual basis in the Meadow Creek riparian pasture of the Box T allotment (#534).
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.
14. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.3.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Box T allotment in accordance with terms and conditions within the application received May 29, 2013, from Robert Thomas. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

A holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment and used by Rohl Hipwell in association with his authorization to graze cattle in the

Red Mountain, Bridge Creek, and Boone Peak allotments) would be managed in association with Rohl Hipwell's authorization, as noted in alternatives for management of these allotments.

Mr. Thomas would be offered a grazing permit for a term of 10 years with an active use of 1,774 AUMs as outlined in Table ALT-19 and with no change from the current permit. This would be 261 AUMs more than under Alternative 1 – Current Situation, with the difference in AUMs being the result of greater livestock numbers and the same period of grazing use for the allotment.

Table ALT-19: Permitted grazing use within the Box T allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
1,774 AUMs	605 AUMs	2,379 AUMs

In accordance with the May 29, 2013, application, the grazing schedule for pastures of the Box T allotment identified in Table ALT-20 would be established and authorized with noted flexibility as a term and condition of the permit offered.

Table ALT-20: Box T allotment grazing strategy with implementation of Alternative 2 – Applicant's Proposed Action

Pasture	Scheduled Use
1	6/1 to 7/15
2	6/1 to 11/30
3	6/1 to 7/15
4	7/15 to 11/30

- Pasture 1 would typically be grazed from 6/1 to 7/15, but authorized use would include flexibility to occasionally use the pasture in the fall (7/15 to 11/30) when pasture 4 is used in the spring.
- Pasture 2 would be available with flexibility for grazing use throughout the permitted season due to the availability of livestock water from a pipeline.
- Pasture 3 would typically be used 6/1 to 7/15, but authorized use would include flexibility to occasionally use the pasture from 11/10 to 11/30.
- Pasture 4 would typically be used 7/15 to 11/30, but authorization would include flexibility to occasionally use the pasture in the spring (6/1 to 7/15) when pasture 1 is used in the fall.
- The schedule includes flexibility to extend the grazing season to 11/30 in those pastures scheduled for fall use, as long as authorized active use AUMs are not exceeded.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-21 and the following numbered items.

Table ALT-21: Mandatory and other terms and conditions of the offered permit to graze livestock within the Box T allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00534 Box T	295	Cattle	6/1	11/30	100	Active	1,774

Terms and conditions:

1. Grazing use in the Box T allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Early use (March 1 to March 31) may be authorized on an annual basis in the Meadow Creek Riparian pasture of the Box T Allotment (#534).

3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.

Two developed springs within the Box T allotment pasture 1 (T.6S, R.2W, Section 34 NW¼SE¼ and T.6S., R.2W., Section 35 SE¼NE¼) were proposed for reconstruction in the permit renewal application received. These two spring developments are not on the list of BLM projects within the Box T allotment. These spring reconstructions would not be considered for analysis in this EA, as summarized in Section 2.4 (Alternatives Considered but not Analyzed in Detail). Although the reconstruction of these springs may contribute toward providing water for a portion of the cattle during the period when pasture 1 is scheduled for use, another portion of cattle when authorized to graze within pasture 1 would continue to access and impact riparian resources adjacent to perennial, interrupted, and/or intermittent streams. The reconstruction/development of these springs is not consistent with the purpose and need identified for this NEPA document in that these projects are not livestock management projects required to facilitate the application of grazing management practices that promote significant progress toward, or the attainment and maintenance of, the standards. Analysis of consequences of any new project construction or reconstruction will be addressed through separate NEPA analysis specific to the proposed project(s) and will not be included in this NEPA document, because implementation of actions identified in the permit renewal application is not dependent on any additional project construction or reconstruction.

Additionally, the application received requested that BLM establish a schedule for juniper control in pastures 1 and 4 of the Box T allotment. As noted above, juniper control is not consistent with the purpose and need identified in this NEPA document in that this project is not a livestock management project required to facilitate the application of grazing management practices that promote significant progress toward, or the attainment and maintenance of, the standards. Juniper control will be addressed through separate NEPA analysis specific to the proposed project(s) and will not be included in this NEPA document, because implementation of actions identified in the permit renewal application is not dependent on the control of juniper.

2.4.3.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Box T allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree

necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-22).

A holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment and used by Rohl Hipwell in association with his authorization to graze cattle in the Red Mountain, Bridge Creek, and Boone Peak allotments) would be managed in association with Rohl Hipwell's authorization as noted in alternatives for management of these allotments.

Table ALT-22: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Box T allotment under Alternative 3.

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 in 1 of 3 years	no use 4/1 to 6/30 in 1 of 3 years	no use 4/1 to 6/30 in 1 of 3 years	no use 4/1 to 6/30 in 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15 in 1 of 3 years	NA	NA	no use 3/15 to 6/15 in 1 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15 in 1 of 3 years	NA	no use 5/1 to 6/15 in 1 of 3 years	NA
Vegetation	no use 5/1 to 7/15 in 2 of 3 years*	no use 5/1 to 7/15 in 2 of 3 years*	no use 5/1 to 7/15 in 2 of 3 years*	no use 5/1 to 7/15 in 2 of 3 years*
Soils	no use 3/1 to 5/31 in 1 of 3 years	no use 3/1 to 5/31 in 1 of 3 years	no use 3/1 to 5/31 in 1 of 3 years	no use 3/1 to 5/31 in 1 of 3 years
Riparian/ Water Quality	no use 7/1-9/30 in 1 of 3 years**	NA	no use 7/1-9/30 in 1 of 3 years**	no use 7/1-9/30 in 1 of 3 years**

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Box T allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for all pastures of the Box T allotment at approximately 10 acres per AUM⁴⁸ (Appendix C). A stocking rate of 10 acres per AUM is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Robert Thomas would be offered a 10-year permit to graze 123 head of cattle with permitted grazing use in the Box T allotment as summarized in Table ALT-23. Authorized active use in the Box T allotment would be reduced from 1,774 AUMs in the existing permit to 736 AUMs. The elimination of 1,038 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-23: Permitted grazing use within the Box T allotment with implementation of Alternative 3

Active Use	Suspension ⁴⁹	Permitted Use
736 AUMs	605 AUMs	1,341 AUMs

The grazing schedule for the Box T allotment, identified in Table ALT-24, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-24: Box T allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	10/1 to 11/30	6/1 to 8/7 * **	6/1 to 8/7 * **
2	8/1 to 9/30	9/11 to 11/3	8/8 to 9/30
3	6/27 to 7/31 **	8/9 to 9/10 **	10/1 to 11/3
4	6/1 to 6/26	11/4 to 11/30	11/4 to 11/30

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6", woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season
As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Box T allotment would be defined as listed in Table ALT-25 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

⁴⁸ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.9 acres would be required to support 1 AUM in the Box T allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Box T allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Box T allotment: 40 percent early seral, 40 percent mid-seral, and 20 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.9 acres per AUM if the ideal conditions were present in the Box T allotment, the current permit is based on an allotment-wide stocking rate of 4.2 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Box T allotment.

⁴⁹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,379 AUMs to 1,341 AUMs would not result in an increase in suspension AUMs.

Table ALT-25: Mandatory and other terms and conditions of the offered permit to graze livestock within the Box T allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00534 Box T	123	Cattle	6/1	11/30	100	Active	736

The following grazing permit terms and conditions specific to the Box T allotment would be included in the permit offered:

1. Grazing use of the Box T allotment (0534) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Box T allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4 inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0534 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.3.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Box T allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-26). High-value resources present in the Box T allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in all four pastures; sage-grouse late brood-rearing/summer habitats in pastures 1, 3, and 4; and 1.0 or more mile(s) of perennial streams in pastures 1 and 3.

A holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment and used by Rohl Hipwell in association with his authorization to graze cattle in the

Red Mountain, Bridge Creek, and Boone Peak allotments) would be managed in association with Rohl Hipwell's authorization as noted in alternatives for management of these allotments.

Table ALT-26: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Box T allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31 2 of 3 years	no use 3/1 to 3/31 2 of 3 years	no use 3/1 to 3/31 2 of 3 years	no use 3/1 to 3/31 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 2 of 3 years	no use 4/1 to 6/30 2 of 3 years	no use 4/1 to 6/30 2 of 3 years	no use 4/1 to 6/30 2 of 3 years
Sage-grouse (late brood-rearing/summer)	no use 7/1 to 8/30 2 of 3 years	NA	no use 7/1 to 8/30 2 of 3 years	no use 7/1 to 8/30 2 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15 2 of 3 years	NA	NA	no use 3/15 to 6/15 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15 2 of 3 years	NA	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 7/1 to 9/30 all years*	NA	no use 7/1 to 9/30 all years*	no use 7/1 to 9/30 all years*

* Pasture contains high-value riparian/ fish habitat

BLM would establish a grazing schedule under Alternative 4 for the Box T allotment that implements the above constraints. Once that schedule is established, the number of cattle would be held consistent through the full grazing season to define the stocking rate for the allotment that does not result in heavier use than would occur at approximately 10 acres per AUM in any pasture⁵⁰ (Appendix C). The stocking rate of 10 acres per AUM is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and appropriate seasons of grazing use.

Robert Thomas would be offered a 10-year permit to graze 52 head of cattle with permitted grazing use in the Box T allotment as summarized in Table ALT-27. Authorized active use in the Box T allotment would be reduced from 1,774 AUMs in the existing permit to 311 AUMs. The elimination of 1,463 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers and flexibility allowing concurrent late season grazing in two pastures, while retaining the same dates of grazing use for the allotment.

Table ALT-27: Permitted grazing use within the Box T allotment with implementation of Alternative 4

Active Use	Suspension ⁵¹	Permitted Use
311 AUMs	605 AUMs	916 AUMs

The grazing schedule for the Box T allotment, identified in Table ALT-28, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-28: Box T allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	10/1 to 11/30	10/1 to 11/30	6/1 to 6/30
2	7/1 to 9/30	7/1 to 9/30	7/1 to 9/30
3	6/1 to 6/30	10/1 to 11/30	10/1 to 11/30
4	10/1 to 11/30	6/1 to 6/30	10/1 to 11/30

* The mean elevation of pasture 2 of the Box T allotment is 5,305 feet, with a maximum of 5,414 feet and a minimum of 5,191 feet. The constraints define the active growing season for native bunchgrass species above 5,000 feet between 5/1 and 7/15, based on the transition from Wyoming big sagebrush at lower elevation to mountain big sagebrush at higher elevation. The dominant ecological site within pasture 2 has a vegetation composition of low sagebrush and deep-rooted perennial bunchgrasses on shallow soils. Two weeks of active growing season grazing use for these sites slightly above 5,000 in all years of the schedule approximates treatment intended with the constraints when one considers the earlier growing season on these shallow soils.

⁵⁰ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.9 acres would be required to support 1 AUM in the Box T allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Box T allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Box T allotment: 40 percent early seral, 40 percent mid-seral, and 20 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.9 acres per AUM if the ideal conditions were present in the Box T allotment, the current permit is based on an allotment-wide stocking rate of 4.2 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Box T allotment.

⁵¹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,379 AUMs to 916 AUMs would not result in an increase in suspension AUMs.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Box T allotment would be defined as listed in Table ALT-29 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-29: Mandatory and other terms and conditions of the offered permit to graze livestock within the Box T allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00534 Box T	52	Cattle	6/1	11/30	100	Active	311

The following grazing permit terms and conditions specific to the Box T allotment would be included in the permit offered:

1. Grazing use of the Box T allotment (0534) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Box T allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0534 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.3.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Box T allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 2,379 AUMs of permitted use in the Box T allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.4 Bridge Creek Allotment⁵²

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Bridge Creek allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 8, but are not the significant causal factors for not meeting Standards 1, 4, and 7. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to the allotment. Livestock management practices do not conform to the applicable Guidelines for Livestock Grazing Management Guidelines 5, 7, 8, and 12 for several Standards (see Appendix A).

2.4.4.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Bridge Creek allotment with the same terms and conditions as those in the existing permits, except for authorized livestock numbers and AUMs of active use. Actual use reported during the nine-year period between 2005 and 2012 has averaged 543 AUMs, with a maximum of 644 AUMs in 2011 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Rohl Hipwell would be authorized to graze cattle in the one pasture of the Bridge Creek allotment from July 1 through October 31 with an authorized active use of 644 AUMs. Authorized active use in the Bridge Creek allotment would be reduced from 664 AUMs in the existing permits to 644 AUMs. The elimination of 20 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Bridge Creek allotment under Alternative 1 is summarized in Table ALT-30.

Table ALT-30: Permitted grazing use within the Bridge Creek allotment with implementation of Alternative 1 – Current Situation

Permittee	Active Use	Suspension ⁵³	Permitted Use
Hipwell	644 AUMs	221 AUMs	865 AUMs

Cattle grazing use in the Bridge Creek allotment by Rohl Hipwell has occurred in recent years consistent with the dates on the permit. Appendix B includes a summary of actual use reported by the permittee in recent years and indicates the treatments that would be implemented under Alternative 1, a continuation of management practices that have been recently implemented in the Bridge Creek allotment. The grazing rotation under Alternative 1 is summarized in Table ALT-31.

Table ALT-31: Grazing schedules for the Bridge Creek allotment under Alternative 1

Pasture	Hipwell
1	7/1 to 10/31

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States

⁵² Alternative 1, the existing situation, would continue management of the public lands in the existing Bridge Creek allotment as a livestock management unit. Alternatives 2, 3, and 4 would result in the reconfiguration of allotments that Rohl Hipwell is currently authorized to graze cattle in and create the proposed Fossil Creek, Pickett Creek, and Red Hill FFR allotments from the existing Red Mountain, Bridge Creek, Boone Peak, Quicksilver FFR, and Stahle FFR allotments. Livestock management terms and conditions that would be implemented in the proposed Pickett Creek allotment, including the one pasture of the existing Bridge Creek allotment, are discussed in the chapter 2 Section and the chapter 3 Section under the existing Red Mountain allotment headings.

⁵³ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 885 AUMs to 865 AUMs would not result in an increase in suspension AUMs.

District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-32 and the following numbered items.

Table ALT-32: Mandatory and other terms and conditions of the offered permit to graze livestock within the Bridge Creek allotment with implementation of Alternative 1 – Current Situation

Allotment	Permittee	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00590 Bridge Creek	Hipwell	159	Cattle	7/1	10/31	100	Active	644

Terms and conditions:

1. Turnout is subject to the Boise District range readiness criteria.
2. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
3. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
4. Changes to the scheduled use require prior approval.
5. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
6. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
7. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
8. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
9. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
10. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
11. Utilization may not exceed 50% of the current year's growth.
12. United States District Court for the District of Idaho imposed terms and conditions
 - o Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - o Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - o Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - o Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.4.2 Alternatives 2, 3, and 4

As identified in the discussion of Alternatives 2, 3, and 4 under the heading for the Red Mountain allotment (Section 2.4.15), BLM would make changes to allotments boundaries that would result from a grouping of pastures where Rohl Hipwell is currently authorized to graze cattle. Pastures 2 and 3 of the existing Red Mountain allotment, the one pasture of the existing Bridge Creek allotment, the one pasture of the existing Boone Peak allotment, and a holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment) would be combined to create the proposed Pickett Creek allotment, consistent with the application received from Rohl Hipwell on June 24, 2011. The Bridge Creek allotment would no longer be an allotment administered by the Owyhee Field

office, but its public land acreage would be managed as one of four pastures and a holding pasture of the Pickett Creek allotment.

See Section 2.4.15 of this EA for the description of Alternative 2, 3, and 4 actions that would be proposed.

2.4.4.3 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Bridge Creek allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 885 AUMs of permitted use in the Bridge Creek allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.5 Browns Creek Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 5 (Seedings), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Browns Creek allotment. Standards 4 (Native Plant Communities) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8, whereas current livestock management practices are not significant factors for not meeting Standard 1. Significant progress is made toward meeting Standard 5. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 5, 7, 8, 10 and 12 for several Standards (see Appendix A).

2.4.5.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Browns Creek allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the nine-year period between 2004 and 2012 has averaged 199 AUMs, with a maximum of 522 AUMs in 2008 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Scott and Sherri Nicholson would be authorized to graze cattle in the allotment from April 1 through June 15, with an authorized active use of 522 AUMs. Authorized active use in the Browns Creek allotment would be reduced from 793 AUMs in the existing permits to 522 AUMs. The elimination of 271 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Browns Creek allotment under Alternative 1 is summarized in Table ALT-33.

Table ALT-33: Permitted grazing use within the Browns Creek allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension⁵⁴	Permitted Use
522 AUMs	617 AUMs	1,139 AUMs

Livestock grazing use in the Browns Creek allotment would be implemented with the grazing schedule limited by the permit, consistent with the 1997 decision and actual use reported between 2004 and 2012.

⁵⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,410 AUMs to 1,139 AUMs would not result in an increase in suspension AUMs.

Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is displayed in Table ALT-34.

Table ALT-34: Typical grazing schedules for the Browns Creek allotment derived from recent reported actual use, based on the 1997 decision schedule

Pasture	Year 1	Year 2
1	4/1 to 6/15	Rest
2	Rest	4/1 to 6/15

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-35 and the following numbered items.

Table ALT-35: Mandatory and other terms and conditions of the offered permit to graze livestock within the Browns Creek allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00585 Browns Creek	209	Cattle	4/1	6/15	100	Active	522

Terms and conditions:

1. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 2.0 miles of Browns Creek in allotment #0585 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

13. United States District Court for the District of Idaho imposed terms and conditions

- Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
- Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
- Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
- Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.5.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Browns Creek allotment in accordance with terms and conditions within the application received June 13, 2013, from Scott Nicholson. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Scott and Sherri Nicholson would be offered a grazing permit for a term of 10 years with an active use of 793 AUMs as outlined in Table ALT-36 and the application received that did not request change from the current permit.

Table ALT-36: Permitted grazing use within the Browns Creek allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Active Use	Suspension	Permitted Use
793 AUMs	617 AUMs	1,410 AUMs

In accordance with the June 13, 2013, application, the grazing schedule for pastures of the Browns Creek allotment identified in Table ALT-37 would be maintained and authorized.

Table ALT-37: The grazing schedules for the Browns Creek allotment identified in the 1997 permit and maintained in the permit renewal application received

Pasture	Year 1	Year 2
1	4/1 to 6/15	Rest
2	Rest	4/1 to 6/15

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-38 and the following numbered items.

Table ALT-38: Mandatory and other terms and conditions of the offered permit to graze livestock within the Browns Creek allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00585 Browns Creek	317	Cattle	4/1	6/15	100	Active	792

Terms and conditions:

1. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 2.0 miles of Browns Creek in allotment #0585 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

2.4.5.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Browns Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-39).

Table ALT-39: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Browns Creek allotment under Alternative 3

Resource	Pasture 1	Pasture 2
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*
Soils	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years
Riparian/ Water Quality	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Browns Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for

the Browns Creek allotment at approximately 12 acres per AUM⁵⁵ (Appendix C). The stocking rate of 12 acres per AUM is a conservative stocking rate consistent with ecological site potential within the allotment that indicates that 9.1 acres would be necessary to support one AUM under ideal conditions. Additionally, available production is limited by inventoried condition, water availability, topography, and current livestock grazing management practices that are significant factors in not meeting Standards 2, 3, 7, and 8.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 125 AUMs as outlined in Table ALT-40. Authorized active use in the Browns Creek allotment would be reduced from 793 AUMs in the existing permit to 125 AUMs. The elimination of 668 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-40: Permitted grazing use within the Browns Creek allotment with implementation of Alternative 3

Active Use	Suspension ⁵⁶	Permitted Use
125 AUMs	617 AUMs	742 AUMs

The grazing schedule for the Browns Creek allotment, identified in Table ALT-41, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-41: Browns Creek allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2
1	4/1 to 6/15 *	Rest
2	Rest	4/1 to 6/15 *

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (6/30)

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Browns Creek allotment would be defined as listed in Table ALT-42 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

⁵⁵ If BLM were to implement actions to maximize livestock use of forage production, approximately 9.1 acres would be required to support 1 AUM in the Browns Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Browns Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Browns Creek allotment: 64 percent early seral and 36 percent treated acres). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 9.1 acres per AUM if the ideal conditions were present in the Browns Creek allotment, the current permit is based on an allotment-wide stocking rate of 4.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8 in the Browns Creek allotment.

⁵⁶ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,410 AUMs to 742 AUMs would not result in an increase in suspension AUMs.

Table ALT-42: Mandatory and other terms and conditions of the offered permit to graze livestock within the Browns Creek allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00585 Browns Creek	50	Cattle	4/1	6/15	100	Active	125

The following grazing permit terms and conditions specific to the Browns Creek allotment would be included in the permit offered:

1. Grazing use of the Browns Creek allotment (0585) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Browns Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 2.0 miles of Browns Creek in allotment #0585 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.5.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Browns Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-43). High-value resources present in the Browns Creek allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in pastures 1 and 2.

Table ALT-43: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Browns Creek allotment under Alternative 4

Resource	Pasture 1	Pasture 2
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years
Soils	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years
Riparian/ Water Quality	no use 6/15-9/30; 2 of 3 years	no use 6/15-9/30; 2 of 3 years

BLM would establish a grazing schedule under Alternative 4 for the Browns Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Browns Creek allotment so that no pasture is grazed at a heavier rate than approximately 12 acres per AUM⁵⁷ (Appendix C). The stocking rate of 12 acres per AUM is a conservative stocking rate consistent with ecological site potential within the allotment that indicates that 9.1 acres would be necessary to support one AUM under ideal conditions. Additionally, available production is limited by inventoried condition, water availability, topography, and current livestock grazing management practices that are significant factors in not meeting Standards 2, 3, 7, and 8.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 125 AUMs in years one and two of the schedule and no use authorized in the third year of each 3-year cycle, as outlined in Table ALT-44. Authorized active use in the Browns Creek allotment would be reduced from 793 AUMs in the existing permit to 125 AUMs. The elimination of 668 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-44: Permitted grazing use within the Browns Creek allotment with implementation of Alternative 4

Active Use	Suspension ⁵⁸	Permitted Use
125 AUMs*	617 AUMs	742 AUMs

⁵⁷ If BLM were to implement actions to maximize livestock use of forage production, approximately 9.1 acres would be required to support 1 AUM in the Browns Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Browns Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Browns Creek Allotment: 64% early seral and 36% treated acres). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 9.1 acres per AUM if the ideal conditions were present in the Browns Creek allotment, the current permit is based on an allotment-wide stocking rate of 4.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8 in the Browns Creek allotment.

⁵⁸ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,410 AUMs to 742 AUMs would not result in an increase in suspension AUMs.

* Although 125 AUMs of active use is authorized in years 1 and 2 of the grazing rotation, rest of both pastures in the allotment from livestock grazing during year 3 is scheduled, resulting in no authorized grazing use every third year. The grazing schedule for the Browns Creek allotment, identified in Table ALT-45, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-45: Browns Creek allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	4/1 to 6/15	Rest	Rest
2	Rest	4/1 to 6/15	Rest

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Browns Creek allotment would be defined as listed in Table ALT-46 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-46: Mandatory and other terms and conditions of the offered permit to graze livestock within the Browns Creek allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00585 Browns Creek	50	Cattle	4/1	6/15	100	Active	125

The following grazing permit terms and conditions specific to the Browns Creek allotment would be included in the permit offered:

1. Grazing use of the Browns Creek allotment (0585) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. The grazing schedule has rest of both pastures in the allotment every third year, resulting in no use authorized in 1 of 3 years. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Browns Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 2.0 miles of Browns Creek in allotment #0585 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.5.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Browns Creek allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 1,410 AUMs of permitted use in the Browns Creek allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.6 Garrett FFR Allotment

Standards 2 (Riparian Areas and Wetlands) and 3 (Stream Channel/Floodplain) of the applicable Standards for Rangeland Health are not being met in the Garrett FFR allotment, but current livestock management practices conform with the Guidelines and significant progress has been made. Standards 1 (Watersheds), 4 (Native Plant Communities), 7 (Water Quality), 8 (Threatened and Endangered Plants and Animals) are met and Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to resources present within the allotment (see Appendix A).

2.4.6.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Garrett FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Garrett FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Garrett FFR allotment would be unchanged from the existing permit with 31 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-47.

Table ALT-47: Permitted grazing use within the Garrett FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
31 AUMs	0 AUMs	31 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-48 and the following numbered items.

Table ALT-48: Mandatory and other terms and conditions of the offered permit to graze livestock within the Garrett FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00626 Garrett FFR	30	Cattle	12/1	12/31	100	Active	31

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0626 are at your discretion.

2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.6.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Garrett FFR allotment in accordance with terms and conditions of the existing permit and as modified by the application received from Scott Nicholson. The number of livestock and season of use on the Garrett FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Garrett FFR allotment would be unchanged from the existing permit with 31 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-49.

Table ALT-49: Permitted grazing use within the Garrett FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
31 AUMs	0 AUMs	31 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-50 and the following numbered items.

Table ALT-50: Mandatory and other terms and conditions of the offered permit to graze livestock within the Garrett FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00626 Garrett FFR	30	Cattle	12/1	12/31	100	Active	31

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0491 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year’s growth.

2.4.6.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Garrett FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-51). While the season of available grazing use authorized and total AUMs used from public lands would be defined, the number of livestock on the Garrett FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Garrett FFR allotment would be unchanged at approximately 21.3 acres per AUM⁵⁹, a conservative

⁵⁹ If BLM were to implement actions to maximize livestock use of forage production, approximately 5.6 acres would be required to support 1 AUM in the Garrett FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Garrett FFR allotment: 45 percent early seral, 40 percent mid-seral, 5 percent late seral, and 10 percent PNC). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores,

stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 5.6 acres per AUM if the ideal conditions were present in the Garrett FFR allotment, the current permit is based on an allotment-wide stocking rate of 11.0 acres per AUM on public land. Although current livestock grazing management practices are significant factors in the failure to meet Standards 2 and 3 in the Garrett FFR allotment, significant progress has been made toward meeting the standards.

Table ALT-51: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Garrett FFR allotment under Alternative 3

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years
Redband Trout (spawning)	NA	no use 3/15 to 6/15; 1 of 3 years	NA	no use 3/15 to 6/15; 1 of 3 years	NA	no use 3/15 to 6/15; 1 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*
Soils	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years
Riparian/ Water Quality	NA	no use 6/15-9/30; 1 of 3 years**	NA	no use 6/15-9/30; 1 of 3 years**	NA	no use 6/15-9/30; 1 of 3 years**

* Flexibility to graze more frequently between 5/1 and 6/30 or 7/15 as applicable with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

Permitted grazing use in the Garrett FFR allotment would be unchanged from the existing permit with 31 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-52.

Table ALT-52: Permitted grazing use within the Garrett FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
31 AUMs	0 AUMs	31 AUMs

The elevation of the Garrett FFR allotment ranges from approximately 3,300 feet in pasture 1 to more than 6,000 feet in pasture 3. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/16 to 3/31). The dates of available grazing for the Garrett FFR allotment, identified in Table ALT-53, would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public and private lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-53: Garrett FFR allotment grazing strategy (date when grazing can occur) with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	4/1 to 12/15 *	4/1 to 12/15 *	7/1 to 12/15
2	4/1 to 12/15 * **	4/1 to 12/15 * **	10/1 to 12/15
3	4/1 to 12/15 *	4/1 to 12/15 *	7/16 to 12/15
4	10/1 to 12/15	4/1 to 12/15 * **	4/1 to 12/15 * **
5	7/16 to 12/15	4/1 to 12/15 *	4/1 to 12/15 *
6	4/1 to 12/15 * **	10/1 to 12/15	4/1 to 12/15 * **

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6", woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Garrett FFR allotment would be defined as listed in Table ALT-54 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-54: Mandatory and other terms and conditions of the offered permit to graze livestock within the Garrett FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00626 Garrett FFR	3	Cattle	4/1	12/15	100	Active	31

The following grazing permit terms and conditions specific to the Garrett FFR allotment would be included in the permit offered:

1. Dates of availability of the pastures of the Garrett FFR allotment (0626) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Garratt FFR allotment (0626) is at permittee's discretion, as long as authorized active use of 31 AUMs from public lands is not exceeded.
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Garrett FFR allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.6.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Garrett FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the one pasture when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-55). High-value resources present in the Garrett FFR allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in pastures 1 through 5, and 1.0 or more mile(s) of perennial streams occur in pasture 4. In addition to defining the season of grazing use authorized, the maximum number of cattle authorized on the Alder Creek FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands which they may control by the permittee⁶⁰. Active AUMs authorized on public land within the Garrett FFR allotment would be unchanged at 31 AUMs, with a stocking rate for public land in the Garrett FFR allotment of approximately 21.3 acres per AUM⁶¹, a conservative stocking rate consistent

⁶⁰ Percent public land for the Garrett FFR allotment was calculated based on the normal-year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁶¹ If BLM were to implement actions to maximize livestock use of forage production, approximately 5.6 acres would be required to support 1 AUM in the Garrett FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential

with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the determination that although Standards 2 and 3 are not met in the allotment, progress toward meeting those standards is being made.

natural condition (ORMP FEIS Table VEGE-2: Garrett FFR allotment: 45 percent early seral, 40 percent mid-seral, 5 percent late seral, and 10 percent PNC). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage for livestock production. When compared to a potential stocking rate of 5.6 acres per AUM if the ideal conditions were present in the Garrett FFR allotment, the current permit is based on an allotment-wide stocking rate of 11.0 acres per AUM on public land. Although current livestock grazing management practices are significant factors in the failure to meet Standards 2 and 3 in the Garrett FFR allotment, significant progress has been made toward meeting the standards.

Table ALT-55: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Garrett FFR allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	NA
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years
Redband Trout (spawning)	NA	no use 3/15 to 6/15; 2 of 3 years	NA	no use 3/15 to 6/15; 2 of 3 years	NA	no use 3/15 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years
Soils	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years
Riparian/ Water Quality	NA	no use 6/15-9/30; 2 of 3 years	NA	no use 6/15-9/30 all years*	NA	no use 6/15-9/30; 2 of 3 years

* Pasture contains high-value riparian/ fish habitat

Permitted grazing use in the Garrett FFR allotment would be unchanged from the existing permit with 31 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-56.

Table ALT-56: Permitted grazing use within the Garrett FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
31 AUMs	0 AUMs	31 AUMs

The elevation of the Garrett FFR allotment ranges from approximately 3,300 feet in pasture 1 to more than 6,000 feet in pasture 3. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/16 to 3/31). The dates of available grazing for the Garrett FFR allotment, identified in Table ALT-57, would be authorized and its implementation would be included as a term and condition of the permit offered. The grazing schedule for the Garrett FFR allotment, identified in Table ALT-57, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-57: Garrett FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	4/1 to 12/15	7/1 to 12/15	7/1 to 12/15
2	10/1 to 12/15	4/1 to 12/15	10/1 to 12/15
3	4/1 to 12/15	7/16 to 12/15	7/16 to 12/15
4	10/1 to 12/15	10/1 to 12/15	10/1 to 12/15
5	7/16 to 12/15	4/1 to 12/15	7/16 to 12/15
6	10/1 to 12/15	10/1 to 12/15	4/1 to 12/15

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Garrett FFR allotment would be defined as listed in Table ALT-58 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-58: Mandatory and other terms and conditions of the offered permit to graze livestock within the Garrett FFR allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00626 Garrett FFR	23	Cattle	4/1	12/15	16	Active	31

The following grazing permit terms and conditions specific to the Garrett FFR allotment would be included in the permit offered:

1. Grazing use in the Garrett FFR allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Garrett FFR allotment for the term of this grazing permit and consistent with the final decision of the authorized officer dated _____ is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.

2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.6.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Garrett FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 31 AUMs of permitted use in the Garrett FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.7 Hart Creek Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Hart Creek allotment. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8, whereas current livestock management practices are not significant factors toward not meeting Standards 1 and 4. Livestock management practices do not conform to the applicable Livestock Grazing Management Guidelines 5, 7, 8, 10, and 12 for several Standards (see Appendix A).

2.4.7.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Hart Creek allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the ten-year period between 2003 and 2012 has averaged 1,252 AUMs, with a maximum of 1,597 AUMs in 2011 (Appendix B). The permittee, Robert Thomas, voluntarily reduced grazing use to no more than 1,351 AUMs since 1996⁶², a result of an agreement with BLM that implemented actions to allow recovery of pastures 1 and 2. Alternative 1 would authorize livestock grazing at a level equivalent to the terms of the agreement to not exceed 1,351 AUMs of use, a level of use that has resulted in current resource conditions on public land within the allotment. The alternative would eliminate 1,014 AUMs of voluntary nonuse. Permitted use that would be authorized in the Hart Creek allotment under Alternative 1 is summarized in Table ALT-59.

⁶² Although the original agreement was to not exceed 1,050 AUMs of use, a subsequent transfer of 300 AUMs of active use to Robert Thomas increased the level of use authorized to no more than 1,351 AUMs (note that exact math does not track through the transfer, with one additional AUM of use following the transfer).

Table ALT-59: Permitted grazing use within the Hart Creek allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ⁶³	Permitted Use
1,351 AUMs	808 AUMs	2,159 AUMs

Livestock grazing use in the Hart Creek allotment would be implemented with the grazing schedule initiated in 1996 and consistent with recent actual use reported. Appendix B includes a summary of actual use reported by the permittee in recent years. The grazing schedule has implemented rest in alternate years within pastures 1 and 2, and grazing early in the season when each pasture is used. Pasture 3 is used annually following grazing in either pasture 1 or 2. The schedule is displayed in Table ALT-60.

Table ALT-60: Typical grazing schedules for the Hart Creek allotment derived from recent reported actual use

Pasture	Year 1	Year 2
1	3/1 to 4/20	Rest
2	Rest	3/1 to 4/20
3	4/21 to 6/15	4/21 to 6/15

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-61 and the following numbered items.

Table ALT-61: Mandatory and other terms and conditions of the offered permit to graze livestock within the Hart Creek allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00532 Hart Creek	557	Cattle	4/1	6/15	97*	Active	1,351

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and Conditions:

1. Minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 3.25 miles of Hart Creek and 1.0 miles of Pickett Creek in allotment #0532 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Early use (March 1 to March 31) may be authorized on an annual basis in the Browns Creek and Hart Creek pastures of Hart Creek Allotment (#532).
3. Preferred use for the Hart Creek allotment will not exceed 1,351 AUMs each year during the length of this permit.
4. Turnout is subject to the Boise District range readiness criteria.
5. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
6. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
7. Changes to the scheduled use require prior approval.

⁶³ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 3,173 AUMs to 2,159 AUMs would not result in an increase in suspension AUMs.

8. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
9. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
10. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
11. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
12. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
13. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
14. Utilization may not exceed 50 percent of the current year's growth.
15. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.7.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Hart Creek allotment in accordance with terms and conditions within the application received May 29, 2013, from Robert Thomas. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Voluntary non-use of 1,014 AUMs that began in 1996 would be restored to active use. Mr. Thomas would be offered a grazing permit for a term of 10 years with an active use of 2,365 AUMs, as outlined in Table ALT-62. This would be 1,014 AUMs more than under Alternative 1 – Current Situation, with the difference in AUMs being the result of greater livestock numbers. The duration of grazing use would be unchanged, but adjusted to occur during a period two weeks earlier than under the existing permit.

Table ALT-62: Permitted grazing use within the Hart Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
2,365 AUMs	808 AUMs	3,173 AUMs

In accordance with the May 29, 2013, application, the grazing schedule for pastures of the Hart Creek allotment identified in Table ALT-63 would be authorized.

Table ALT-63: Hart Creek allotment grazing strategy with implementation of Alternative 2 – Applicant’s Proposed Action

Pasture	Year 1	Year 2
1	3/1 to 4/15	Rest
2	Rest	3/1 to 4/15
3	4/16 to 6/1	4/16 to 6/1

- Pastures 1 and 2 would be grazed in a two-pasture rest rotation schedule with use extending no later than April 15
- Flexibility would be provided to move cattle to pasture 3 earlier than 4/16 as appropriate due to weather conditions, rangeland plant growth and utilization levels, livestock water availability, and livestock management needs.
- The planned end date for use of pasture 3 and the allotment annually would be June 1, although flexibility would be provided to end grazing use as late as June 15.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-64 and the following numbered items.

Table ALT-64: Mandatory and other terms and conditions of the offered permit to graze livestock within the Hart Creek allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00532 Hart Creek	797	Cattle	3/1	6/1	97*	Active	2,365

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. Early use (3/1 to 3/31) may be authorized on an annual basis in pastures 1 (Browns Creek) and 2 (Hart Creek) of the Hart Creek allotment. The Boise District range readiness criteria do not apply due to the availability of mature feed from the prior year, as per an agreement between the permittee and the authorized officer in 1996.
2. Flexibility is provided to extend use in pasture 3 (Cat Creek) to 6/15 as long as authorized active AUMs for the allotment are not exceeded.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make

payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.

11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

The need for development of a spring in pasture 3 (T.6S., R.2W., Section 2) was identified in the permit renewal application received from Robert Thomas. This spring developments would not be considered for analysis in this EA as summarized in Section 2.4 (Alternatives Considered but not Analyzed in Detail). Although the development of this spring may contribute toward providing water for a portion of the cattle during the period when pasture 3 is scheduled for use, another portion of cattle authorized to graze within the allotment would continue to access and impact riparian resources adjacent to perennial, interrupted, and/or intermittent streams. The reconstruction/development of this spring is not consistent with the purpose and need identified for this NEPA document in that this project is not a livestock management project required to facilitate the application of grazing management practices that promote significant progress toward, or the attainment and maintenance of, the standards. Analysis of consequences of any new project construction or reconstruction will be addressed through separate NEPA analysis specific to the proposed project(s) and will not be included in this NEPA document, because implementation of actions identified in the permit renewal application is not dependent on any additional project construction or reconstruction.

Additionally, the application received requested that BLM establish a schedule for juniper control in pasture 3 of the Hart Creek allotment. As noted above, juniper control is not consistent with the purpose and need identified for this NEPA document in that this project is not a livestock management project required to facilitate the application of grazing management practices that promote significant progress toward, or the attainment and maintenance of, the standards. Juniper control will be addressed through separate NEPA analysis specific to the proposed project(s) and will not be included in this NEPA document, because implementation of actions identified in the permit renewal application is not dependent on the control of juniper.

2.4.7.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Hart Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-65).

Table ALT-65: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Hart Creek allotment under Alternative 3.

Resource	Pasture 1	Pasture 2	Pasture 3
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 in 1 of 3 years	no use 4/1 to 6/30 in 1 of 3 years	no use 4/1 to 6/30 in 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15 in 1 of 3 years	NA	NA
Vegetation	no use 5/1 to 6/30 in 2 of 3 years*	no use 5/1 to 6/30 in 2 of 3 years*	no use 5/1 to 6/30 in 2 of 3 years*
Soils	no use 3/1 to 5/15 in 1 of 3 years	no use 3/1 to 5/15 in 1 of 3 years	no use 3/1 to 5/15 in 1 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 in 1 of 3 years **	no use 6/15 to 9/30 in 1 of 3 years **	no use 6/15 to 9/30 in 1 of 3 years **

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Hart Creek allotment that implements the above constraints. Once that schedule is established, BLM would maintain the stocking rate for all pastures of the Hart Creek allotment at approximately 15 acres per AUM⁶⁴. This rate would be a lighter level than the current 12 acres per AUM that has contributed toward not meeting Standards (Appendix C), and is a conservative rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography, and meet resource management objectives, including Standards.

Robert Thomas would be offered a 10-year permit to graze 353 head of cattle at 97 percent public land, with permitted grazing use in the Hart Creek allotment as summarized in Table ALT-66. Authorized active use in the Hart Creek allotment would be reduced from 1,351 AUMs (including voluntary nonuse) to 1,047 AUMs. The elimination of 1,318 AUMs of active use (including voluntary nonuse), would not result in a conversion to suspension as discussed in Section 2.1.2. The reduction in AUMs of use authorized would result from a combined reduction in livestock numbers and a reduction in the number of days of authorized use, with the change to earlier beginning and ending dates for annual grazing use.

Table ALT-66: Permitted grazing use within the Hart Creek allotment with implementation of Alternative 3

Active Use	Suspension ⁶⁵	Permitted Use
1,047 AUMs	808 AUMs	1,855 AUMs

The grazing schedule for the Hart Creek allotment, identified in Table ALT-67, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility would be provided to delay the beginning date of grazing until 3/15 and to delay the ending date of grazing until 6/15, as long as livestock numbers and AUMs used do not exceed permit numbers. Additional flexibility in the date of cattle movement between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

⁶⁴ If BLM were to implement actions to maximize livestock use of forage production, approximately 7.4 acres would be required to support 1 AUM in the Hart Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Pasture specific data for potential production under ideal conditions identify pasture 3 as more productive (5.6 acres per AUM) compared to pastures 1 and 2 (8.7 and 8.3 acres per AUM respectively). These ideal conditions are not present within the Hart Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Hart Creek allotment: 75 percent early seral and 25 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 7.4 acres per AUM if the ideal conditions were present in the Hart Creek allotment, the current authorization with the voluntary reduction is based on an allotment-wide stocking rate of 11.6 acres per AUM in year one of the schedule and 12.1 acres per AUM in year two of the schedule, when one does not include acreage of rested pastures. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8 in the Hart Creek allotment.

⁶⁵ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 3,173 AUMs to 1,855 AUMs would not result in an increase in suspension AUMs.

Table ALT-67: Hart Creek allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	3/1 to 4/20	Rest	3/1 to 4/20
2	Rest	3/1 to 4/20	4/21 to 6/1
3	4/21 to 6/1 *	4/21 to 6/1 *	Rest

* Upland utilization not to exceed 40 percent at the end of the active growing season (6/30)

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Hart Creek allotment would be defined as listed in Table ALT-68 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-68: Mandatory and other terms and conditions of the offered permit to graze livestock within the Hart Creek allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00532 Hart Creek	353	Cattle	3/1	6/1	97*	Active	1,047

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Hart Creek allotment would be included in the permit offered:

1. Grazing use of the Hart Creek allotment (0532) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility is provided to delay the beginning date of grazing until 3/15 and to delay the ending date of grazing until 6/15, as long as livestock numbers and AUMs used do not exceed permit numbers. Additional flexibility in the date of cattle movement between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Hart Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 3.25 miles of Hart Creek and 1.0 miles of Pickett Creek in allotment #0532 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
4. The Boise District range readiness criteria do not apply at turnout in pastures 1 and 2, due to the availability of mature feed with scheduled rest from the prior year.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
2. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
3. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
4. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.

5. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
6. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
7. Utilization may not exceed 50 percent of the current year's growth.

2.4.7.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Hart Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-69). High-value resources present in the Hart Creek allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in all three pastures; sage-grouse late brood-rearing/summer habitats in pasture 3; and 1.0 or more mile(s) of perennial streams occur in pasture 1.

Table ALT-69: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Hart Creek allotment under Alternative 4.

Resource	Pasture 1	Pasture 2	Pasture 3
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/3 in one 2 of 3 years	no use 3/1 to 3/31 in 2 of 3 years	no use 3/1 to 3/31 in 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 in 2 of 3 years	no use 4/1 to 6/30 in 2 of 3 years	no use 4/1 to 6/30 in 2 of 3 years
Sage-grouse (late brood-rearing/summer)	NA	NA	no use 7/1 to 8/30 in 2 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15in 2 of 3 years	NA	NA
Vegetation	no use 5/1 to 6/30 in 2 of 3 years	no use 5/1 to 6/30 in 2 of 3 years	no use 5/1 to 6/30 in 2 of 3 years
Soils	no use 3/1 to 5/15 in 2 of 3 years	no use 3/1 to 5/15 in 2 of 3 years	no use 3/1 to 5/15 in 2 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 in all years	no use 6/15 to 9/30 in 2 of 3 years	no use 6/15 to 9/30 in 2 of 3 years

BLM would establish a grazing schedule under Alternative 4 for the Hart Creek allotment that implements the above constraints, which would result in grazing use in each pasture 1 of 3 years and rest in the other 2 years. Once that schedule is established, BLM would maintain the stocking rate for all pastures of the Hart Creek allotment at approximately 12 acres per AUM⁶⁶, a level equivalent to the current authorization implementing the voluntary nonuse and not including the acreage of rested pastures (Appendix C), which is consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography, and when one considers that constraints would result in rest of each pasture 2 of every 3 years.

Robert Thomas would be offered a 10-year permit to graze 243 head of cattle, with permitted grazing use in the Hart Creek allotment as summarized in Table ALT-70. Authorized active use in the Hart Creek allotment, excluding voluntary nonuse, would be reduced from 1,351 AUMs in the existing permit to 589 AUMs. The elimination of 762 AUMs of active use that can currently be made and 1,014 AUMs of voluntary non-use would not result in a conversion to suspension as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while maintaining the existing beginning date and end date for annually authorized grazing.

Table ALT-70: Permitted grazing use within the Hart Creek allotment with implementation of Alternative 4

Active Use	Suspension ⁶⁷	Permitted Use
589 AUMs	808 AUMs	1,397 AUMs

The grazing schedule for the Hart Creek allotment, identified in Table ALT-71, would be authorized under Alternative 4 and its implementation would be included as a term and condition of the permit offered.

Table ALT-71: Hart Creek allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	4/1 to 6/15	Rest	Rest
2	Rest	4/1 to 6/15	Rest
3	Rest	Rest	4/1 to 6/15

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Hart Creek allotment would be defined as listed in Table ALT-72 and the bullets listing allotment-specific and applicable Boise District terms and conditions.

⁶⁶ If BLM were to implement actions to maximize livestock use of forage production, approximately 7.4 acres would be required to support 1 AUM in the Hart Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Pasture specific data for potential production under ideal conditions identify pasture 3 as more productive (5.6 acres per AUM) compared to pastures 1 and 2 (8.7 and 8.3 acres per AUM respectively). These ideal conditions are not present within the Hart Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Hart Creek allotment: 75 percent early seral and 25 percent mid seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 7.4 acres per AUM if the ideal conditions were present in the Hart Creek allotment, the current authorization with the voluntary reduction is based on an allotment-wide stocking rate of 11.6 acres per AUM in year one of the schedule and 12.1 acres per AUM in year two of the schedule when one does not include acreage of rested pastures. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8 in the Hart Creek allotment.

⁶⁷ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 3,173 AUMs to 1,397 AUMs would not result in an increase in suspension AUMs.

Table ALT-72: Mandatory and other terms and conditions of the offered permit to graze livestock within the Hart Creek allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00532 Hart Creek	243	Cattle	4/1	6/15	97*	Active	589

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Hart Creek allotment would be included in the permit offered:

1. Grazing use of the Hart Creek allotment (0532) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Hart Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 3.25 miles of Hart Creek and 1.0 miles of Pickett Creek in allotment #0532 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.7.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Hart Creek allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 3,173 AUMs of permitted use in the Hart Creek allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.8 Josephine FFR Allotment

Standards 4 (Native Plant Communities) and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Josephine FFR allotment, whereas Standard 1 (Watersheds) is met and Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 5 (Seedings), 6 (Exotic Plant Communities, other than Seedings), and 7 (Water Quality) are not applicable to resources present within the allotment. Current livestock grazing management practices are not significant factors in failing to meet Standards 4 and 8 (see Appendix A).

2.4.8.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Josephine FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Josephine FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Josephine FFR allotment would be unchanged from the existing permit with 20 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-73.

Table ALT-73: Permitted grazing use within the Josephine FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
20 AUMs	0 AUMs	20 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-74 and the following numbered items.

Table ALT-74: Mandatory and other terms and conditions of the offered permit to graze livestock within the Josephine FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00458 Josephine FFR	20	Cattle	12/1	12/31	100	Active	20

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0458 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be

notarized prior to submission and be in compliance with Boise District policy.

10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.8.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Josephine FFR allotment in accordance with terms and conditions of the existing permits and as modified by the proposed updates received July 25, 2013, from Steve Boren representing Josephine Ranch. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Josephine FFR allotment would be unchanged from the existing permit with 20 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-75.

Table ALT-75: Permitted grazing use within the Josephine FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
20 AUMs	0 AUMs	20 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-76 and the following numbered items.

Table ALT-76: Mandatory and other terms and conditions of the offered permit to graze livestock within the Josephine FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00458 Josephine FFR	20	Cattle	12/1	12/31	100	Active	20

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0458 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.

5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50% of the current year's growth.

2.4.8.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Josephine FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present (see Table ALT-77). While the season of grazing use authorized and total AUMs used would be defined, the number of livestock on the Josephine FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Josephine FFR allotment would be unchanged at approximately 17.3 acres per AUM⁶⁸, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-77: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Josephine FFR allotment under Alternative 3

Resource	Pasture 1
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 1 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*

⁶⁸ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.0 acres would be required to support 1 AUM in the Josephine FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Josephine FFR Allotment: 15% early seral, 85% mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.0 acres per AUM if the ideal conditions were present in the Josephine FFR allotment, the current permit is based on an allotment-wide stocking rate of 17.3 acres per AUM on public land. Although Standards 4 and 8 are not met within the allotment, current livestock grazing management practices are not significant factors.

Resource	Pasture 1
Soils	no use 3/1 to 5/31; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 7/15 with utilization limits (see Section 2.2.3)

Permitted grazing use in the Josephine FFR allotment would be unchanged from the existing permit with 20 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-78.

Table ALT-78: Permitted grazing use within the Josephine FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
20 AUMs	0 AUMs	20 AUMs

The elevation of public land within the Josephine FFR allotment ranges from approximately 5,500 feet to 5,800 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (1/1 to 4/30⁶⁹). The dates of available grazing for the Josephine FFR allotment identified in Table ALT-79 would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public, private, and state lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-79: Josephine FFR allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	5/1 to 12/31 *	5/1 to 12/31 *	7/16 to 12/31

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Josephine FFR allotment would be defined as listed in Table ALT-80 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-80: Mandatory and other terms and conditions of the offered permit to graze livestock within the Josephine FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00458 Josephine FFR	2	Cattle	5/1	12/31	100	Active	20

The following grazing permit terms and conditions specific to the Josephine FFR allotment would be included in the permit offered:

1. Dates of availability of the Josephine FFR allotment (0458) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Josephine FFR allotment (0458) is at permittee's discretion, as long as authorized active use of 20 AUMs from public lands is not exceeded.

⁶⁹ Reported actual use in recent years has not included use after 12/31 or before 5/1.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.8.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Josephine FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present and additionally protect and enhance high-value resources (see Table ALT-81). In the absence of high-value resources as defined in Section 2.2.4, no additional actions would be implemented in the Josephine FFR allotment.

In addition to defining the season of grazing use authorized, the maximum number of livestock on the Josephine FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁷⁰. Active AUMs authorized on public land within the Josephine FFR allotment would be increased to 34 AUMs, resulting in a stocking rate for public land in the Josephine FFR allotment of approximately 10 acres per AUM⁷¹, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water

⁷⁰ Percent public land for the Josephine FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁷¹ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.0 acres would be required to support 1 AUM in the Josephine FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Josephine FFR allotment: 15 percent early seral, 85 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.0 acres per AUM if the ideal conditions were present in the Josephine FFR allotment, the current permit is based on an allotment-wide stocking rate of 17.3 acres per AUM on public land. Although Standards 4 and 8 are not met within the allotment, current livestock grazing management practices are not significant factors.

availability, topography, and the determination that livestock grazing management practices are not a significant factor toward not meeting land health standards.

Table ALT-81: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Josephine FFR allotment under Alternative 4

Resource	Pasture 1
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years

Permitted grazing use in the Josephine FFR allotment would be increased from the existing permit with 20 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-82.

Table ALT-82: Permitted grazing use within the Josephine FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
34 AUMs	0 AUMs	34 AUMs

The elevation of public land within the Josephine FFR allotment extends from approximately 5,500 feet to 5,800 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (1/1 to 4/30). The grazing schedule for the Josephine FFR allotment identified in Table ALT-83 would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-83: Josephine FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	5/1 to 12/31	7/15 to 12/31	7/15 to 12/31

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Josephine FFR allotment would be defined as listed in Table ALT-84 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-84: Mandatory and other terms and conditions of the offered permit to graze livestock within the Josephine FFR allotment with implementation of Alternative 4

Allotment	Grazing Rotation Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00458 Josephine FFR	1	42	Cattle	5/1	12/31	10*	Active	34
	2 & 3	61	Cattle	7/15	12/31	10*	Active	34

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Josephine FFR allotment would be included in the permit offered:

1. Grazing use in the Josephine FFR allotment (0458) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.

2. While cattle numbers authorized in the Josephine FFR allotment will be restricted to no more than 42 head in year one of the schedule, cattle numbers authorized in years two and three with the shorter period of authorized use shall not exceed 61 head.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.8.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Josephine FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 20 AUMs of permitted use in the Josephine FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.9 Lone Tree Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Lone Tree allotment, while Standard 7 (Water Quality) is met. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 4, and 8, whereas current livestock management practices are not significant factors toward not meeting Standard 1. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 4, 5, 7, 8, 9 and 12 for several Standards (see Appendix A).

2.4.9.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Lone Tree allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 10-year period between 2003 and 2012 has averaged 675 AUMs, with a maximum of 942 AUMs in 2011 (Appendix B). The 1997 permit limited annual use to 800 AUMs from public lands, with use of pastures 1 and 2 early to protect and enhance riparian ecosystems. Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Josephine Ranch would be authorized to graze cattle annually within the Lone Tree allotment between May 16 and October 31 for the authorized active use of 942 AUMs. Authorized active use in the Lone Tree allotment would be reduced from 1,523 AUMs in the

existing permit (limited to 800 AUMs) to 942 AUMs. The elimination of 581 AUMs of active use would not result in a conversion to suspension as discussed in Section 2.1.2. Permitted use in the Lone Tree allotment under Alternative 1 is summarized in Table ALT-85.

Table ALT-85: Permitted grazing use within the Lone Tree allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ⁷²	Permitted Use
942 AUMs	515 AUMs	1,457 AUMs

Livestock grazing use in the Lone Tree allotment would be implemented with the grazing schedule limited by the permit and consistent with actual use reported between 2003 and 2012. Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is displayed in Table ALT-86.

Table ALT-86: Typical grazing schedules for the Lone Tree allotment derived from the permit and recent reported actual use

Pasture	Typical Schedule
1, (2)*	5/16 to 6/30
3	7/1 to 7/30
4, 5, 6	8/1 to 10/31

*Pasture 2 was recognized as the portion of the current pasture 1 that is west of Josephine Creek. Josephine Creek does not provide a barrier to livestock movement.

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-87 and the following numbered items.

Table ALT-87: Mandatory and other terms and conditions of the offered permit to graze livestock within the Lone Tree allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00587 Lone Tree	302	Cattle	5/16	10/31	56*	Active	942

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and Conditions:

1. Riparian pastures 1 and 2 will be utilized as the early use pastures each year to protect and enhance riparian ecosystems.
2. Minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.3 miles of Rose Creek in allotment #0587 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.

⁷² In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,038 AUMs to 1,457 AUMs would not result in an increase in suspension AUMs.

6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.
14. United States District Court for the District of Idaho imposed terms and conditions
 - o Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - o Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - o Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - o Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.9.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Lone Tree allotment in accordance with terms and conditions of the existing permits and as modified by the proposed updates received July 25, 2013, from Steve Boren representing Josephine Ranch. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Although the proposed updates to the grazing permit received did not provide detail regarding livestock numbers, AUMs of use, or implementation of a planned grazing schedule, notes from a meeting on May 22, 2013, with the permittee's representative and a representative from Idaho Department of Lands did summarize planned actions. Josephine Ranch would be offered a grazing permit for a term of 10 years with an active use of 1,523 AUMs as outlined in Table ALT-88. This would maintain authorized active use AUMs from the permit and increase the limit to 800 AUMs annually compared to Alternative 1 – Current Situation, with the increase in AUMs being the result of increasing livestock numbers.

Table ALT-88: Permitted grazing use within the Lone Tree allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
1,523 AUMs	515 AUMs	2,038 AUMs

Consistent with notes from the May 22, 2013, meeting, the grazing schedule for pastures of the Lone Tree allotment identified in Table ALT-89 would be authorized.

Table ALT-89: Lone Tree allotment grazing strategy with implementation of Alternative 2 – Applicant’s Proposed Action

Pasture	Typical use	Periodic use
1, (2)*	5/16 to 6/30	9/16 to 10/31
3, 4, 5	7/1 to 10/15	6/1 to 9/15
6	10/16 to 10/31	5/16 to 5/31

*Note that pasture 2 was recognized as the portion of the current pasture 1 that is west of Josephine Creek. Josephine Creek does not provide a barrier to livestock movement.

- Pastures 1 and 6 would be managed as turnout/fall use
- An existing fence that is mostly on state land divides pasture 6, allowing use of the two individually or together, based on the season and management needs

Mandatory and other terms and conditions of the offered permits would be defined as listed in Table ALT-90 and the following numbered items.

Table ALT-90: Mandatory and other terms and conditions of the offered permits to graze livestock within the Lone Tree allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00587 Lone Tree	489	Cattle	5/16	10/31	56*	Active	1,523

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and Conditions:

1. Grazing use in the Lone Tree allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.3 miles of Rose Creek in allotment #0587 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make

payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.

12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.

2.4.9.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Lone Tree allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-91).

Table ALT-91: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Lone Tree allotment under Alternative 3

Resource	Pasture 1	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	NA	NA	NA	NA
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years	NA	NA	NA	no use 3/15 to 6/15; 1 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years	NA	NA	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 7/1-9/30; 1 of 3 years**	NA	no use 7/1-9/30; 1 of 3 years**	NA	no use 7/1-9/30; 1 of 3 years**

* Flexibility to graze more frequently between 5/1 and 7/15 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Lone Tree allotment that implements the above constraints. Once that schedule is established, BLM would set livestock numbers and the subsequent stocking rate for the Lone Tree allotment so as to not implement grazing at a heavier level than would occur at approximately 10 acres per AUM⁷³ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Josephine Ranch would be offered a grazing permit for a term of 10 years with an active use of 713 AUMs, as outlined in Table ALT-92. Authorized active use in the Lone Tree allotment would be reduced from 1,523 AUMs in the existing permit (800 AUMs as limited by terms and conditions of the 1997 permit) to 713 AUMs. The elimination of 810 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-92: Permitted grazing use within the Lone Tree allotment with implementation of Alternative 3

Active Use	Suspension ⁷⁴	Permitted Use
713 AUMs	515 AUMs	1,228 AUMs

The grazing schedule for the Lone Tree allotment, identified in Table ALT-93, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-93: Lone Tree allotment grazing strategy with implementation of Alternative 3

Pasture	Years 1	Year 2
1, (2)	5/16 to 7/15 *	9/11 to 10/31
3	7/16 to 8/10	8/1 to 9/30
4	8/11 to 9/10 **	6/1 to 6/30
5	9/11 to 10/10	7/1 to 7/31
6	10/11 to 10/31	5/16 to 5/31

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6", woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

⁷³ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.5 acres would be required to support 1 AUM the Lone Tree allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Lone Tree allotment: 35 percent early seral and 65 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.5 acres per AUM if the ideal conditions were present in the Lone Tree allotment, the current permit is based on an allotment-wide stocking rate of 4.7 acres per AUM on public land (8.9 acres per AUM with the 800 AUM limitation identified in terms and conditions of the 1997 permit). Current livestock grazing management practices are significant factors in the failure to meet Standards 2, 3, 4, and 8 in the Lone Tree allotment.

⁷⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,038 AUMs to 1,228 AUMs would not result in an increase in suspension AUMs.

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Lone Tree allotment would be defined as listed in Table ALT-94 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-94: Mandatory and other terms and conditions of the offered permit to graze livestock within the Lone Tree allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00587 Lone Tree	229	Cattle	5/16	10/31	56*	Active	713

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Lone Tree allotment would be included in the permit offered:

1. Grazing use of the Lone Tree allotment (0587) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. Minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.3 miles of Rose Creek in allotment #0587 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.9.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Lone Tree allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-95). High-value resources present in the Lone Tree allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking

habitats and sage-grouse late brood-rearing/summer habitats in pasture 1, and 1.0 or more mile(s) of perennial streams in pastures 1 and 6.

Table ALT-95: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Lone Tree allotment under Alternative 4

Resource	Pasture 1	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	NA	NA	NA	NA
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	NA	NA	NA	NA
Sage-grouse (late brood-rearing/summer)	no use 7/1 to 8/30; 2 of 3 years	NA	NA	NA	NA
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years	NA	NA	NA	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years	NA	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 7/1-9/30: all years*	NA	no use 7/1-9/30; all years*	NA	no use 7/1-9/30; all years*

* Pasture contains high-value riparian/ fish habitat

BLM would establish a grazing schedule under Alternative 4 for the Lone Tree allotment that implements the above constraints. Once that schedule is established, the number of cattle would be held consistent through the full grazing season to define the stocking rate for the allotment that does not result in heavier use than would occur at approximately 10 acres per AUM in any pasture that does not receive a full year of rest during the grazing rotation⁷⁵ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and appropriate seasons of grazing use.

Josephine Ranch would be offered a 10-year permit with an active use of 513 AUMs, as outlined in Table ALT-96. Authorized active use in the Lone Tree allotment would be reduced from 1,523 AUMs in the existing permit (800 AUMs as limited by terms and conditions of the 1997 permit) to 513 AUMs. The elimination of 1,010 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-96: Permitted grazing use within the Lone Tree allotment with implementation of Alternative 4

Active Use	Suspension ⁷⁶	Permitted Use
513 AUMs	515 AUMs	1,028 AUMs

The grazing schedule for the Lone Tree allotment, identified in Table ALT-97, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-97: Lone Tree allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1 (2)	5/15 to 6/30	10/1 to 10/31	10/1 to 10/31
3	7/1 to 8/31*	7/1 to 8/31*	8/1 to 9/30
4	Rest	5/15 to 6/30	Rest
5	9/1 to 10/15	9/1 to 10/31	6/11 to 7/31
6	10/16 to 10/31	Rest	5/16 to 6/10

* Although the constraints above for pasture 3 identify no more than 1 in 3 years grazing use during the active growing season (5/1 to 7/15), scheduled use late during this period (7/1 to 7/15) in 2 of 3 years is considered equivalent to no more than 1 in 3 years.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Lone Tree allotment would be defined as listed in Table ALT-98 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

⁷⁵If BLM were to implement actions to maximize livestock use of forage production, approximately 4.5 acres would be required to support 1 AUM the Lone Tree allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Lone Tree allotment: 35 percent early seral and 65 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loading. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.5 acres per AUM if the ideal conditions were present in the Lone Tree allotment, the current permit is based on an allotment-wide stocking rate of 4.7 acres per AUM on public land (8.9 acres per AUM with the 800 AUM limitation identified in terms and conditions of the 1997 permit). Current livestock grazing management practices are significant factors in the failure to meet Standards 2, 3, 4, and 8 in the Lone Tree FFR allotment.

⁷⁶In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,038 AUMs to 1,028 AUMs would not result in an increase in suspension AUMs.

Table ALT-98: Mandatory and other terms and conditions of the offered permit to graze livestock within the Lone Tree allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00587 Lone Tree	165	Cattle	5/16	10/31	56*	Active	513

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Lone Tree allotment would be included in the permit offered:

1. Grazing use of the Lone Tree allotment (0587) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. Minimum 4-inch stubble height will be left on herbaceous vegetation within the riparian area along 0.3 miles of Rose Creek in allotment #0587 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.9.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Lone Tree allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 2,038 AUMs of permitted use in the Lone Tree allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.10 Louisa Creek Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the

applicable Standards for Rangeland Health are being met in the Louisa Creek allotment. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7, whereas current livestock management practices are not significant factors toward not meeting Standards 1, 4, and 8. Livestock management practices do not conform to the applicable Livestock Grazing Management Guidelines 5, 7, and 10 for several Standards (see Appendix A).

2.4.10.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Louisa Creek allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 10-year period between 2003 and 2012 has averaged 1,601 AUMs, with a maximum of 1,798 AUMs in 2012 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, the estate of Charles Steiner would be authorized to graze cattle in the allotment from May 1 through October 31, with an authorized active use of 1,798 AUMs. Authorized active use in the Louisa Creek allotment would be reduced from 1,868 AUMs in the existing permits to 1,798 AUMs. The elimination of 70 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Louisa Creek allotment under Alternative 1 is summarized in Table ALT-99.

Table ALT-99: Permitted grazing use within the Louisa Creek allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ⁷⁷	Permitted Use
1,798 AUMs	654 AUMs	2,452 AUMs

Livestock grazing use in the Louisa Creek allotment would be implemented with the grazing schedule limited by the permit and consistent with the 1997 decision and actual use reported between 2003 and 2012. Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is displayed in Table ALT-100.

Table ALT-100: Typical grazing schedules for the Louisa Creek allotment derived from recent reported actual use

Pasture	Typical Year 1	Typical Year 2
1	5/1 to 6/30	10/1 to 10/31
2 and 6*	10/1 to 10/31	5/1 to 6/30
3, 4, and 5	7/1 to 9/30	7/1 to 9/30

* Pastures 2 and 6 have been recognized as one pasture to date, known as pasture 2.

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States

⁷⁷ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,522 AUMs to 2,452 AUMs would not result in an increase in suspension AUMs.

District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-101 and the following numbered items.

Table ALT-101: Mandatory and other terms and conditions of the offered permit to graze livestock within the Louisa Creek allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00601 Louisa Creek	309	Cattle	5/1	10/31	96*	Active	1,798

* Application of percent public land to the offered permit is subject to submission of documentation of private land in the allotment controlled by the permittee.

Terms and conditions:

1. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 0.5 miles of Rock Creek in allotment #0601 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and

- Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.10.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Louisa Creek allotment in accordance with terms and conditions within the application received October 31, 2011, from John Steiner. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. That application did not request changes to the terms and conditions of the existing permit. The complete application is reproduced in Appendix D.

The Estate of Charles Steiner would be offered a grazing permit for a term of 10 years with an active use of 1,868 AUMs as outlined in Table ALT-102 and with no change from the current permit.

Table ALT-102: Permitted grazing use within the Louisa Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
1,868 AUMs	654 AUMs	2,522 AUMs

Consistent with the October 31, 2011, application that was received and requested no changes to terms and conditions of the existing permit, the grazing schedule for pastures of the Louisa Creek allotment identified in Table ALT-103 would be established and authorized.

Table ALT-103: Louisa Creek allotment grazing strategy with implementation of Alternative 2 – Applicant's Proposed Action

Pasture	Year 1	Year 2
1	5/1 to 6/30	10/1 to 10/31
2 and 6*	10/1 to 10/31	5/1 to 6/30
3, 4, and 5	7/1 to 9/30	7/1 to 9/30

* Pastures 2 and 6 have been recognized as one pasture to date, known as pasture 2.

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-104 and the following numbered items.

Table ALT-104: Mandatory and other terms and conditions of the offered permit to graze livestock within the Louisa Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00601 Louisa Creek	321	Cattle	5/1	10/31	96*	Active	1,868

* Application of percent public land to the offered permit is subject to submission of documentation of private land in the allotment controlled by the permittee.

Terms and conditions:

1. Grazing use in the Louisa Creek allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____.
2. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 0.5 miles of Rock Creek in allotment #0601 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.

The application for renewal of the grazing permit for use in the Louisa Creek and Steiner FFR allotments included a request that AUMs in the Fossil Creek⁷⁸ allotment (Fossil Butte #535) be re-instated. Preference to graze livestock in Fossil Butte allotment previously held by Charles Steiner (prior to 1994) is outside the scope of this permit renewal process that would renew authorizations to graze livestock in Group 3 allotments. Whereas billings prior to 1994 included use in the Fossil Butte allotment, Mr. Steiner's 1997 permit (operator number 111475) no longer recognized authorization to graze cattle in the Fossil Butte allotment.

2.4.10.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Louisa Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-105).

⁷⁸ Note that a new allotment named the Fossil Creek allotment and composed of pasture 1 of the existing Red Mountain allotment is identified in alternatives 2 through 4 under the Red Mountain heading (Section 2.4.15). The Fossil Creek allotment referred to in reference to the Steiner permit is unrelated to the proposal to create a proposed Fossil Creek allotment as a part of alternatives in this EA.

Table ALT-105: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Louisa Creek allotment under Alternative 3

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	NA	NA	no use 4/1 to 6/30; 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years	NA	no use 3/15 to 6/15; 1 of 3 years	NA	NA	no use 3/15 to 6/15; 1 of 3 years
Spotted Frog (breeding)	NA	NA	no use 5/1 to 6/15; 1 of 3 years	NA	NA	no use 5/1 to 6/15; 1 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 7/1-9/30; 1 of 3 years	no use 7/1-9/30; 1 of 3 years	no use 7/1-9/30; 1 of 3 years	NA	NA	no use 7/1-9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Louisa Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Louisa Creek allotment at approximately 10 acres per AUM⁷⁹ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the impact of juniper dominance reducing the production of herbaceous species. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7.

The Estate of Charles Steiner would be offered a permit for a term of 10 years with an active use of 1,028 AUMs, as outlined in Table ALT-106. Authorized active use in the Louisa Creek allotment would be reduced from 1,868 AUMs in the existing permit to 1,028 AUMs. The elimination of 840 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-106: Permitted grazing use within the Louisa Creek allotment with implementation of Alternative 3

Active Use	Suspension ⁸⁰	Permitted Use
1,028 AUMs	654 AUMs	1,682 AUMs

The grazing schedule for the Louisa Creek allotment, identified in Table ALT-107, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-107: Louisa Creek allotment grazing strategy with implementation of Alternative 3

Pasture	Years 1 and 2	Year 3
1	5/1 to 6/10 *	9/16 to 10/31
2	10/1 to 10/15	5/16 to 5/31
3	6/11 to 7/31 * **	6/1 to 6/30
4 and 5	8/1 to 9/30	7/1 to 9/15

⁷⁹ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.8 acres would be required to support 1 AUM in the Louisa Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Louisa Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Louisa Creek allotment: 65 percent early seral and 35 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.8 acres per AUM if the ideal conditions were present in the Louisa Creek allotment, the current permit is based on an allotment-wide stocking rate of 5.3 acres per AUM on public land. Although Standards 1, 4, and 8 are not met in the Louisa Creek allotment due to other factors, current livestock grazing management practices are significant factors contributing to not meeting Standards 2, 3, and 7.

⁸⁰ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,522 AUMs to 1,682 AUMs would not result in an increase in suspension AUMs.

Pasture	Years 1 and 2	Year 3
6	10/16 to 10/31	5/1 to 5/15

* Upland utilization limit not to exceed 20 percent in pastures 1 or 2 and 40 % in pastures 3, 4, or 5 at the end of the active growing season (7/15)

** When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Louisa Creek allotment would be defined as listed in Table ALT-108 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-108: Mandatory and other terms and conditions of the offered permit to graze livestock within the Louisa Creek allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00601 Louisa Creek	177	Cattle	5/1	10/31	96*	Active	1,028

* Application of percent public land to the offered permit is subject to submission of documentation of private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Louisa Creek allotment would be included in the permit offered:

1. Grazing use of the Louisa Creek allotment (0601) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Louisa Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 0.5 miles of Rock Creek in allotment #0601 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.

6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.10.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Louisa Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-109). High-value resources present in the Louisa Creek allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in pastures 1, 2, and 6; sage-grouse late brood-rearing/summer habitats in pastures 2, 3, and 6; and 1.0 or more mile(s) of perennial streams in pastures 1, 3, and 6.

Table ALT-109: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Louisa Creek allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	NA	NA	NA	no use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	NA	NA	no use 4/1 to 6/30; 2 of 3 years
Sage-grouse (late brood-rearing/summer)	NA	no use 7/1 to 8/30; 2 of 3 years	no use 7/1 to 8/30; 2 of 3 years	NA	NA	no use 7/1 to 8/30; 2 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years	NA	no use 3/15 to 6/15; 2 of 3 years	NA	NA	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	NA	NA	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; two of three years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality**	no use 7/1-9/30; all years*	no use 7/1-9/30; two out of three years	no use 7/1-9/30; all years*	NA	NA	no use 7/1-9/30; all years*

BLM would establish a grazing schedule under Alternative 4 for the Louisa Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for pastures of the Louisa Creek allotment at approximately 10 acres or more per AUM⁸¹ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the impact of juniper dominance reducing the production of herbaceous species. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7.

The Estate of Charles Steiner would be offered a permit for a term of 10 years with an active use of 523 AUMs as outlined in Table ALT-110. Authorized active use in the Louisa Creek allotment would be reduced from 1,868 AUMs in the existing permit to 523 AUMs. The elimination of 1,345 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-110: Permitted grazing use within the Louisa Creek allotment with implementation of Alternative 4

Active Use	Suspension ⁸²	Permitted Use
523 AUMs	654 AUMs	1,177 AUMs

The grazing schedule for the Louisa Creek allotment, identified in Table ALT-111, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-111: Louisa Creek allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	5/1 to 6/30	10/1 to 10/31	Rest
2	7/1 to 7/15*	5/16 to 6/30	10/1 to 10/15
3	10/1 to 10/31	Rest	5/1 to 6/30
4 and 5	7/16 to 9/30	7/1 to 9/30	7/1 to 9/30
6	Rest	5/1 to 5/15	10/16 to 10/31

* The mean elevation of pasture 1 of the Louisa Creek allotment is 5,423 feet, with a maximum of 5,816 feet and a minimum of 5,025 feet. The constraints define the active growing season for native bunchgrass species above 5,000 feet between 5/1 and 7/15, based on the transition from Wyoming big sagebrush at lower elevation to mountain big sagebrush at higher elevation. The dominant ecological site within pasture 1 has a vegetation composition of low sagebrush and deep-rooted perennial bunchgrasses on shallow soils. Two weeks of grazing use for these sites slightly above 5,000 in year 1 of the schedule, longer use that occurs during the majority of the active growing season in year 2, and fall use outside the active growing season approximates treatment

⁸¹ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.8 acres would be required to support 1 AUM in the Louisa Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Louisa Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Louisa Creek allotment: 65 percent early seral and 35 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.8 acres per AUM if the ideal conditions were present in the Louisa Creek allotment, the current permit is based on an allotment-wide stocking rate of 5.3 acres per AUM on public land. Although Standards 1, 4, and 8 are not met in the Louisa Creek allotment due to other factors, current livestock grazing management practices are significant factors contributing to not meeting Standards 2, 3, and 7.

⁸² In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 2,522 AUMs to 1,177 AUMs would not result in an increase in suspension AUMs.

intended with the constraints when one considers the earlier growing season on these shallow soils and scheduled use well after the boot-stage of bunchgrass growth in 2 of 3 years.

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Louisa Creek allotment would be defined as listed in Table ALT-112 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-112: Mandatory and other terms and conditions of the offered permit to graze livestock within the Louisa Creek allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00601 Louisa Creek	90	Cattle	5/1	10/31	96*	Active	523

* Application of percent public land to the offered permit is subject to submission of documentation of private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Louisa Creek allotment would be included in the permit offered:

1. Grazing use of the Louisa Creek allotment (0601) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Toy allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0533 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.10.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Louisa Creek allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 2,522 AUMs of permitted use in the Louisa Creek allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.11 Meadow Creek FFR

Standards 1 (Watersheds), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Meadow Creek FFR Allotment, but significant progress is being made toward meeting these standards. Standard 7 (Water Quality) is not being met. Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 5 (Seedings), and 6 (Exotic Plant Communities, other than Seedings) are not applicable to resources present within the allotment. Current livestock grazing management practices are not significant factors for not meeting Standards 1, 4, 7, or 8 (see Appendix A).

2.4.11.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Meadow Creek FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Meadow Creek FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Meadow Creek FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-113.

Table ALT-113: Permitted grazing use within the Meadow Creek FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits due to the absence of riparian resources on public land in the Meadow Creek allotment. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-114 and the following numbered items.

Table ALT-114: Mandatory and other terms and conditions of the offered permit to graze livestock within the Meadow Creek FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00491 Meadow Creek FFR	46	Cattle	12/1	12/31	100	Active	47

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0606 is at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

2.4.11.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Meadow Creek FFR allotment in accordance with terms and conditions of the existing permit and as modified by the applications received from Robert Thomas. Although the season of use depicted on the permit would be adjusted to more closely resemble recent actual use and the application, the number of livestock and season of use on the Meadow Creek FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Meadow Creek FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-115.

Table ALT-115: Permitted grazing use within the Meadow Creek FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-116 and the following numbered items.

Table ALT-116: Mandatory and other terms and conditions of the offered permit to graze livestock within the Meadow Creek FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00491 Meadow Creek FFR	7	Cattle	6/1	12/10	100	Active	47

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0491 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year’s growth.

2.4.11.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Meadow Creek FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-117). Because recent livestock management practices that include not turning out livestock in the allotment until after June 1 were allowing progress toward meeting Standard 1, the constraint for soils identified in Section 2.2.3 was modified to have no grazing use planned before June 1 in all years. This additional constraint for the Meadow Creek FFR allotment would result in impacts equal to or less than those that would occur in the current situation for soils and indirectly for upland vegetation and wildlife habitats. While the season of available grazing use authorized and total AUMs used would be defined, the number of livestock on the Meadow Creek FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Meadow

Creek FFR allotment would be unchanged at approximately 7.7 acres per AUM⁸³, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-117: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Meadow Creek FFR allotment under Alternative 3

Resource	Pasture 1
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 1 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; in all years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

Permitted grazing use in the Meadow Creek FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-118.

Table ALT-118: Permitted grazing use within the Meadow Creek FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

The elevation of the Meadow Creek FFR allotment is approximately 5,400 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/1 to 3/31). The dates of available grazing for the Meadow Creek FFR allotment, identified in Table ALT-119, would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public and private lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-119: Meadow Creek FFR allotment grazing strategy with implementation of Alternative 3

Pasture	Scheduled Use		
	Year 1	Year 2	Year 3
1	6/1 to 11/30 *	6/1 to 11/30 *	7/16 to 11/30

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/1)

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Meadow Creek FFR allotment would be defined as listed in Table ALT-120 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

⁸³ If BLM were to implement actions to maximize livestock use of forage production, approximately 6.2 acres would be required to support 1 AUM in the Meadow Creek FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Meadow Creek FFR Allotment: 100 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 6.2 acres per AUM if the ideal conditions were present in the Meadow Creek FFR allotment, the current permit is based on an allotment-wide stocking rate of 7.7 acres per AUM on public land. Current livestock grazing management practices are not significant factors in the failure to meet Standards 1, 4, and 8 in the Meadow Creek FFR allotment.

Table ALT-120: Mandatory and other terms and conditions of the offered permit to graze livestock within the Meadow Creek FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period			% PL	Type Use	AUMs
	Number	Kind	Year	Begin	End			
00491 Meadow Creek FFR	7	Cattle	1 & 2	6/1	11/30	100	Active	47
			3	7/16	11/30			

The following grazing permit terms and conditions specific to the Meadow Creek FFR allotment would be included in the permit offered:

1. Dates of availability of the Meadow Creek FFR allotment (0491) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Meadow Creek FFR allotment (0491) is at permittee's discretion.
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Meadow Creek FFR allotment for the term of this grazing permit and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Meadow Creek FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the one pastures when identified resources are present and additionally protect and enhance high-value resources (see Table ALT-121). Because recent livestock management practices that include not turning out livestock in the allotment until after June 1 were allowing progress toward meeting Standard 1, the constraint for soils identified in Section 2.2.4 was modified to have no grazing use planned before June 1 in all years. This additional constraint for the Meadow Creek FFR allotment would result in impacts equal to or less than those that would occur in the current situation for soils and indirectly for upland vegetation and wildlife habitats. High-value resources,

as defined in Section 2.2.4, are limited to sage-grouse pre-laying/lekking habitats in the one pasture. The maximum number of livestock on the Meadow Creek FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁸⁴. The stocking rate for public land in the Meadow Creek FFR allotment would be unchanged at approximately 7.7 acres per AUM⁸⁵, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the determination that current livestock management practices are not significant factors in the failure to meet land health standards.

Table ALT-121: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Meadow Creek FFR allotment under Alternative 4

Resource	Pasture 1
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31 in 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 in 2 of 3 years
Vegetation	no use 5/1 to 7/15 in 2 of 3 years
Soils	no use 3/1 to 5/31 all years

Permitted grazing use in the Meadow Creek FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-122.

Table ALT-122: Permitted grazing use within the Meadow Creek FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

The elevation of the Meadow Creek FFR allotment is approximately 5,400 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/1 to 3/31). The grazing schedule for the Meadow Creek FFR allotment identified in Table ALT-123 would be authorized and its implementation would be included as a term and condition of the permit offered.

⁸⁴ Percent public land for the Meadow Creek FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁸⁵ If BLM were to implement actions to maximize livestock use of forage production, approximately 6.2 acres would be required to support 1 AUM in the Meadow Creek FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Meadow Creek FFR allotment: 100 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 6.2 acres per AUM if the ideal conditions were present in the Meadow Creek FFR allotment, the current permit is based on an allotment-wide stocking rate of 7.7 acres per AUM on public land. Current livestock grazing management practices are not significant factors in the failure to meet Standards 1, 4, and 8 in the Meadow Creek FFR allotment.

Table ALT-123: Meadow Creek FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	7/15 to 11/30	7/15 to 11/30	6/1 to 11/30

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Meadow Creek FFR allotment would be defined as listed in Table ALT-124 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-124: Mandatory and other terms and conditions of the offered permit to graze livestock within the Meadow Creek FFR allotment with implementation of Alternative 4

Allotment	Grazing Rotation Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00491 Meadow Creek FFR	1 & 2	28	Cattle	7/15	11/30	37*	Active	47
	3	21	Cattle	6/1	11/30	37*	Active	47

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Meadow Creek FFR allotment would be included in the permit offered:

1. Grazing use in the Meadow Creek FFR allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. While cattle numbers authorized in the Meadow Creek FFR allotment will be restricted to no more than 28 head in years one and two of the schedule, cattle numbers authorized in years three with the shorter period of authorized use shall not exceed 21 head.
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Meadow Creek FFR allotment for the term of this grazing permit and consistent with the final decision of the authorized officer dated _____ is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.

8. Utilization may not exceed 50 percent of the current year's growth.

2.4.11.4 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Meadow Creek FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 47 AUMs of permitted use in the Meadow Creek FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.12 Moore FFR Allotment

Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Moore FFR Allotment, whereas Standards 1 (Watersheds) is met and Standards 5 (Seedings), 6 (Exotic Plant Communities, other than Seedings), and 7 (Water Quality) are not applicable to resources present within the allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), and 8, whereas current livestock management practices are not significant factors in not meeting Standard 4. Current livestock management practices do not conform to the applicable Livestock Grazing Management Guidelines 5, 7, 8, and 12 for the Standards not met (see Appendix A).

2.4.12.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Moore FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Moore FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Moore FFR allotment would be unchanged from the existing permit with 48 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-125.

Table ALT-125: Permitted grazing use within the Moore FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
48 AUMs	0 AUMs	48 AUMs

Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permit because Moore FFR allotment was not included in permits subject to the litigation. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-126 and the following numbered items.

Table ALT-126: Mandatory and other terms and conditions of the offered permit to graze livestock within the Moore FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00606 Moore FFR	47	Cattle	12/1	12/31	100	Active	48

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0606 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

2.4.12.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Moore FFR allotment in accordance with terms and conditions of the existing permit and as modified by the application received from Craig and Georgene Moore. The number of livestock and season of use on the Moore FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The complete application is reproduced in Appendix D.

Permitted grazing use in the Moore FFR allotment would be unchanged from the existing permit with 48 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-127.

Table ALT-127: Permitted grazing use within the Moore FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
48 AUMs	0 AUMs	48 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-128 and the following numbered items.

Table ALT-128: Mandatory and other terms and conditions of the offered permit to graze livestock within the Moore FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00606 Moore FFR	9	Cattle	6/1	11/10	100	Active	48

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0606 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year’s growth.

2.4.12.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Moore FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present (see Table ALT-129). While the season of grazing use authorized and total AUMs used would be defined, the number of livestock on the Moore FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Moore FFR allotment would be unchanged at approximately 6.8 acres per AUM⁸⁶, a conservative stocking rate consistent with

⁸⁶ If BLM were to implement actions to maximize livestock use of forage production, approximately 3.3 acres would be required to support 1 AUM in the Moore FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Moore FFR allotment: 20 percent early seral, 80 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 3.3 acres per AUM if the ideal conditions were present in the Moore FFR allotment, the current permit is based on an

ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-129: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Moore FFR allotment under Alternative 3

Resource	Pasture 1
Redband Trout (spawning)	no use 3/15 to 6/15 1 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 7/1- 9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

Permitted grazing use in the Moore FFR allotment would be unchanged from the existing permit with 48 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-130.

Table ALT-130: Permitted grazing use within the Moore FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
48 AUMs	0 AUMs	48 AUMs

The elevation of public land within the Moore FFR allotment extends from a low of approximately 5,800 feet to a high in excess of 6,200 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/11 to 5/31). The dates of available grazing for the Moore FFR allotment identified in Table ALT-130 would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public, private, and state lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-131: Moore FFR allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	6/1 to 11/10 * **	6/1 to 11/10 * **	10/1 to 11/10

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6", woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Moore FFR allotment would be defined as listed in Table ALT-132 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-132: Mandatory and other terms and conditions of the offered permit to graze livestock within the Moore FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00606 Moore FFR	9	Cattle	6/1	11/10	100	Active	48

allotment-wide stocking rate of 6.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in the failure to meet Standards 2, 3, and 8 in the Moore FFR allotment.

The following grazing permit terms and conditions specific to the Moore FFR allotment would be included in the permit offered:

1. Dates of availability of the Moore FFR allotment (0606) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Moore FFR allotment (0606) is at permittee's discretion, as long as authorized active use of 60 AUMs from public lands is not exceeded.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.12.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Moore FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present and additionally protect and enhance high-value resources (see Table ALT-134). In the absence of high-value resources as defined in Section 2.2.4, no additional actions would be implemented in the Moore FFR allotment.

In addition to defining the season of grazing use authorized, the maximum number of livestock on the Moore FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁸⁷. Active AUMs authorized on public land within the Moore FFR allotment would be reduced to 40 AUMs, with a resulting stocking rate for public land in the Moore FFR allotment of 8 acres per AUM⁸⁸, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

⁸⁷ Percent public land for the Moore FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁸⁸ If BLM were to implement actions to maximize livestock use of forage production, approximately 3.3 acres would be required to support 1 AUM in the Moore FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential,

Table ALT-134: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Moore FFR allotment under Alternative 4

Resource	Pasture 1
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 7/1- 9/30; 2 of 3 years

Craig and Georgene Moore would be offered a grazing permit for a term of 10 years with an active use of 40 AUMs, as outlined in Table ALT-135. Authorized active use in the Moore FFR allotment would be reduced from 48 AUMs in the existing permit to 40 AUMs⁸⁹. The elimination of 8 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The reduction in authorized active use would occur at the same time that seasons of use and cattle numbers would be defined for this allotment under Alternative 4. Seasons of use, livestock numbers, or both would remain undefined and at the discretion of the permittee under Alternatives 1 through 3.

Table ALT-135: Permitted grazing use within the Moore FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
40 AUMs	0 AUMs	40 AUMs

The elevation of public land within the Moore FFR allotment ranges from approximately 5,800 feet to more than 6,200 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/11 to 5/31). The grazing schedule for the Moore FFR allotment identified in Table ALT-136 would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-136: Moore FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	6/1 to 11/10	10/1 to 11/10	10/1 to 11/10

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Moore FFR allotment would be defined as listed in Table ALT-137 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Moore FFR allotment: 20 percent early seral, 80 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 3.3 acres per AUM if the ideal conditions were present in the Moore FFR allotment, the current permit is based on an allotment-wide stocking rate of 6.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in the failure to meet Standards 2, 3, and 8 in the Moore FFR allotment.

^{89 89} In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 48 AUMs to 40 AUMs would not result in an increase in suspension AUMs.

Table ALT-137: Mandatory and other terms and conditions of the offered permit to graze livestock within the Moore FFR allotment with implementation of Alternative 4

Allotment	Grazing Rotation Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00606 Moore FFR	1	20	Cattle	6/1	11/10	37*	Active	40
	2 & 3	81	Cattle	10/1	11/10	37*	Active	40

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Moore FFR allotment would be included in the permit offered:

1. Grazing use in the Moore FFR allotment (0606) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. While cattle numbers authorized in the Moore FFR allotment will be restricted to no more than 20 head in year one of the schedule, cattle numbers authorized in years two and three with the shorter period of authorized use shall not exceed 81 head.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.12.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Moore FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no permit would be offered. All 48 AUMs of permitted use in the Moore FFR allotment (48 AUMs active and 0 AUMs suspension) would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application for a grazing permit attached to the current base property.

2.4.13 Munro FFR Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 4 (Native Plant Communities), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are

being met in the Munro FFR Allotment. Standards 3 (Stream Channel/Floodplain), 5 (Seedings), 6 (Exotic Plant Communities, other than Seedings), and 7 (Water Quality) are not applicable to this allotment. Livestock management practices conform to the applicable Livestock Grazing Management Guidelines (see Appendix A).

2.4.13.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Munro FFR allotment consistent with the summarized actions that have led to the current conditions. Although actual use reported in recent years has indicated the allotment has not been grazed, the permittee has recently identified that public parcels of the allotment have been fenced separate from private land and the public portions have received incidental grazing use in accordance with the current permit. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Munro FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee.

Permitted grazing use in the Munro FFR allotment would be unchanged from the existing permit with 15 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-138.

Table ALT-138: Permitted grazing use within the Munro FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
15 AUMs	0 AUMs	15 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-139 and the following numbered items.

Table ALT-139: Mandatory and other terms and conditions of the offered permit to graze livestock within the Munro FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00461 Munro FFR	15	Cattle	12/1	12/31	100	Active	15

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0606 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.

9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment

2.4.13.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Munro FFR allotment in accordance with terms and conditions of the existing permit and as modified by the application received from Joe Parkinson. Although the season of use depicted on the permit would be adjusted to more closely resemble recent actual use and the application, the number of livestock and season of use on the Munro FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Munro FFR allotment would be unchanged from the existing permit with 15 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-140.

Table ALT-140: Permitted grazing use within the Munro FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
15 AUMs	0 AUMs	15 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-141 and the following numbered items.

Table ALT-141: Mandatory and other terms and conditions of the offered permit to graze livestock within the Munro FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00461 Munro FFR	2	Cattle	5/1	11/15	100	Active	15

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0461 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth

2.4.13.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Munro FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present (see Table ALT-142). While the season of grazing use authorized and total AUMs used would be defined, the number of livestock on the Munro FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Munro FFR allotment would be unchanged at approximately 5.2 acres per AUM⁹⁰, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

⁹⁰ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.8 acres would be required to support 1 AUM in the Munro FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Munro FFR Allotment: 20 percent early seral, 80 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.8 acres per AUM if the ideal conditions were present in the Munro FFR allotment, the current permit is based on an allotment-wide stocking rate of 5.2 acres per AUM on public land. The Idaho Standards for Rangeland health are all met or are not applicable to resources present in the Munro FFR allotment.

Table ALT-142: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Munro FFR allotment under Alternative 3

Resource	Pasture 1
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	No use 7/1- 9/30; 1 of 3 years**

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

Permitted grazing use in the Munro FFR allotment would be unchanged from the existing permit with 15 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-143.

Table ALT-143: Permitted grazing use within the Munro FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
15 AUMs	0 AUMs	15 AUMs

The elevation of public land within the Munro FFR allotment is approximately 5,300 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/15 to 4/30). The dates of available grazing for the Munro FFR allotment identified in Table ALT-144 would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public, private, and state lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-144: Munro FFR allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	5/1 to 11/15 * **	5/1 to 11/15 * **	10/1 to 11/15

* Upland utilization limit not to exceed 20 percent at the end of the active growing season

** Riparian intensity of use limited to stubble height no less than 6 in, woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Munro FFR allotment would be defined as listed in Table ALT-145 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-145: Mandatory and other terms and conditions of the offered permit to graze livestock within the Munro FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00461 Munro FFR	2	Cattle	5/1	11/15	100	Active	15

The following grazing permit terms and conditions specific to the Munro FFR allotment would be included in the permit offered:

1. Dates of availability of the Munro FFR allotment (0461) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Munro FFR allotment (0461) is at permittee's discretion, as long as authorized active use of 15 AUMs from public lands is not exceeded.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.13.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Munro FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present and additionally protect and enhance high-value resources (see Table ALT-146). High-value resources present in the Munro FFR allotment, as defined in Section 2.2.4, are limited to sage-grouse pre-laying/lekking habitats. In addition to defining the season of grazing use authorized, the maximum number of livestock on the Munro FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁹¹. Active AUMs authorized on public land within the Munro FFR allotment would be reduced to 10 AUMs, with a resulting stocking rate for public land in the Munro FFR allotment of approximately 8 acres per AUM⁹², a conservative stocking rate consistent

⁹¹ Percent public land for the Munro FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁹² If BLM were to implement actions to maximize livestock use of forage production, approximately 4.8 acres would be required to support 1 AUM in the Munro FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Munro FFR Allotment: 20% early seral, 80% mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency,

with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Table ALT-146: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Munro FFR allotment under Alternative 4

Resource	Pasture 1
Sage-grouse (pre-laying/lekking)	No use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	No use 4/1 to 6/30; 2 of 3 years
Spotted Frog (breeding)	No use 5/1 to 6/15; 2 of 3 years
Vegetation	No use 5/1 to 7/15; 2 of 3 years
Soils	No use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	No use 7/1- 9/30; 2 of 3 years

Joe Parkinson would be offered a grazing permit for a term of 10 years with an active use of 10 AUMs as outlined in Table ALT-147. Authorized active use in the Munro FFR allotment would be reduced from 15 AUMs in the existing permit to 10 AUMs⁹³. The elimination of 5 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The reduction in authorized active use would occur at the same time that seasons of use and cattle numbers would be defined for this allotment under Alternative 4. Seasons of use, livestock numbers, or both would be undefined and at the discretion of the permittee under Alternatives 1 through 3.

Table ALT-147: Permitted grazing use within the Munro FFR allotment with implementation of Alternative 4

Active Use	Suspension⁹⁴	Permitted Use
10 AUMs	0 AUMs	10 AUMs

The elevation of public land within the Munro FFR allotment is approximately 5,300 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/15 to 4/30). The grazing schedule for the Munro FFR allotment identified in Table ALT-148 would be authorized and its implementation would be included as a term and condition of the permit offered.

including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.8 acres per AUM if the ideal conditions were present in the Munro FFR allotment, the current permit is based on an allotment-wide stocking rate of 5.2 acres per AUM on public land. The Idaho Standards for Rangeland health are all met or are not applicable to resources present in the Munro FFR allotment.

^{93 93} In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 15 AUMs to 10 AUMs would not result in an increase in suspension AUMs.

⁹⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 15 AUMs to 10 AUMs would not result in an increase in suspension AUMs.

Table ALT-148: Munro FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	5/1 to 11/15	10/1 to 11/15	10/1 to 11/15

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Munro FFR allotment would be defined as listed in Table ALT-149 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-149: Mandatory and other terms and conditions of the offered permit to graze livestock within the Munro FFR allotment with implementation of Alternative 4

Allotment	Grazing Rotation Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00461 Munro FFR	1	12	Cattle	5/1	11/15	12*	Active	10
	2 & 3	54	Cattle	10/1	11/15	12*	Active	10

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Munro FFR allotment would be included in the permit offered:

1. Grazing use in the Munro FFR allotment (0461) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. While cattle numbers authorized in the Munro FFR allotment will be restricted to no more than 12 head in year one of the schedule, cattle numbers authorized in years two and three, and the shorter period of authorized use shall not exceed 54 head.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.13.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Munro FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 15 AUMs of permitted use in the Munro FFR allotment would be cancelled and

unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.14 Quicksilver FFR

Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 7 (Water Quality), 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Quicksilver FFR allotment, whereas Standards 1 (Watersheds) and 4 (Native Plant Communities) are met. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7. Although Standard 8 is not met, significant progress is being made. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to the allotment. Livestock management practices do not conform to all applicable Livestock Grazing Management Guidelines 5, 7, and 10 for several Standards (see Appendix A).

2.4.14.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Quicksilver FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Quicksilver FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Quicksilver FFR allotment would be unchanged from the existing permit with 12 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-150.

Table ALT-150: Permitted grazing use within the Quicksilver FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
12 AUMs	0 AUMs	12 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-151 and the following numbered items.

Table ALT-151: Mandatory and other terms and conditions of the offered permit to graze livestock within the Quicksilver FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00483 Quicksilver FFR	12	Cattle	12/1	12/31	100	Active	12

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0483 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.

4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.14.2 Alternative 2

Under Alternative 2, BLM would make changes to allotments boundaries consistent with the application for permit renewal received from Rohl Hipwell. Allotment boundary changes would result from a new grouping of pastures in allotments in which Rohl Hipwell is currently authorized to graze cattle. The three pastures of the existing Quicksilver FFR allotment would be combined with the one pasture of the existing Stahle FFR allotment to create the new Red Hill FFR allotment⁹⁵.

A summary of the allotment reconfiguration is provided in Table ALT-152 and Map RNGE-3.

Table ALT-152: Summary of the reconfiguration of pastures within the existing Quicksilver FFR and Stahle FFR allotments to create the Red Hill FFR allotment

Existing Allotment / Pasture (number-name)	Proposed Allotment / Pasture (number-name)
Quicksilver FFR / Pasture 1-Quicksilver FFR 1	Red Hill FFR / Pasture 1-Red Hill FFR 1
Quicksilver FFR / Pasture 2- Quicksilver FFR 2	Red Hill FFR / Pasture 2- Red Hill FFR 2
Quicksilver FFR / Pasture 3- Quicksilver FFR 3	Red Hill FFR / Pasture 3- Red Hill FFR 3
Stahle FFR / Pasture 1-Stahle FFR	Red Hill FFR / Pasture 4- Red Hill FFR 4

⁹⁵ The reconfiguration of pastures in the application received identified the naming of created allotments based on existing allotment names. In an effort to avoid confusion, BLM applied new geographically based names to created allotments.

BLM would renew the livestock grazing permit for use in the Red Hill FFR allotment in accordance with terms and conditions of the existing permit and as modified by the applications received from Rohl Hipwell. The number of livestock and season of use on the Red Hill FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Permitted grazing use in the Red Hill FFR allotment would be unchanged from the existing permit for use in the Quicksilver FFR and Stahle FFR allotments, with 47 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-153.

Table ALT-153: Permitted grazing use within the Red Hill FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

The application included a term and condition that the cattle numbers and period of use on the FFR allotment be at the discretion of the permittee. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-154 and the following numbered items.

Table ALT-154: Mandatory and other terms and conditions of the offered permit to graze livestock within the Red Hill FFR allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Red Hill FFR	46	Cattle	12/1	12/31	100	Active	47

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.

12. Utilization may not exceed 50 percent of the current year's growth.

2.4.14.3 Alternative 3

Under Alternative 3, BLM would make changes to allotment boundaries for the Quicksilver FFR and Stahle allotments, as described under Alternative 2 above (Section 2.4.14.2). The Red Hill FFR allotment would be created from the existing three pastures of the Quicksilver FFR allotment and the one pasture of the Stahle FFR allotment.

BLM would renew the livestock grazing permit for use in the Red Hill FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-155). While the season of available grazing use authorized and total AUMs used from public lands would be defined, the number of livestock on the Red Hill FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Red Hill FFR allotment would be unchanged at approximately 5.6 acres per AUM⁹⁶, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

⁹⁶ If BLM were to implement actions to maximize livestock use of forage production, approximately 3.1 and 3.2 acres would be required to support 1 AUM in the existing Quicksilver FFR and Stahle FFR allotment respectively in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the two existing allotments. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Quicksilver FFR Allotment: 100% early seral; Stahle FFR allotment: 40 percent early seral and 60 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of slightly more than 3 acres per AUM if the ideal conditions were present in the Red Hill FFR allotment, the current permit is based on an allotment-wide stocking rate of 5.6 acres per AUM on public land. Standards 1 and 4 are met in the existing Quicksilver FFR allotment, while Standard 1 is met and current livestock grazing management practices are not a significant factors in the failure to meet Standard 4 in the existing Stahle FFR allotment.

Table ALT-155: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Red Hill FFR allotment under Alternative 3

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Redband Trout (spawning)	NA	no use 3/15 to 6/15; 1 of 3 years	NA	NA
Vegetation	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years
Riparian/ Water Quality	NA	no use 7/1-9/30; 1 of 3 years**	NA	NA

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

Permitted grazing use in the Red Hill FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-156.

Table ALT-156: Permitted grazing use within the Red Hill FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

The elevation of public land in the Red Hill FFR allotment ranges from approximately 4,400 feet to more than 6,400 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/16 to 3/31). The dates of available grazing for the Red Hill FFR allotment, identified in Table ALT-157, would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public and private lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-157: Red Hill FFR allotment grazing strategy (date when grazing can occur) with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	4/1 to 12/15 *	4/1 to 12/15 *	7/16 to 12/15
2	4/1 to 12/15 * **	10/1 to 12/15	4/1 to 12/15 * **
3	4/1 to 12/15 *	7/16 to 12/15	4/1 to 12/15 *
4	7/1 to 12/15 *	4/1 to 12/15 *	4/1 to 12/15

* Upland utilization limit not to exceed 20 percent at the end of the active growing season

** Riparian intensity of use limited to stubble height no less than 6 in, woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Red Hill FFR allotment would be defined as listed in Table ALT-158 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-158: Mandatory and other terms and conditions of the offered permit to graze livestock within the Red Hill FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Red Hill FFR	5	Cattle	4/1	12/15	100	Active	47

The following grazing permit terms and conditions specific to the Red Hill allotment would be included in the permit offered:

1. Dates of availability of the Red Hill FFR allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.

2. The number of livestock authorized on the Red Hill FFR allotment is at permittee's discretion, as long as authorized active use of 47 AUMs from public lands is not exceeded.
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Alder Creek FFR allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.14.4 Alternative 4

Under Alternative 4, BLM would make changes to allotment boundaries for the Quicksilver FFR and Stahle FFR allotments, as described under Alternative 2 above (Section 2.4.14.2). The Red Hill FFR allotment would be created from the existing three pastures of the Quicksilver FFR allotment and the one pasture of the Stahle FFR allotment.

BLM would renew the livestock grazing permit for use in the Red Hill FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the one pasture when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-159). No high-value resources, as defined in Section 2.2.4, are present within the pastures of the Red Hill allotment. In addition to defining the season of grazing use authorized, the maximum number of livestock on the Red Hill FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public land and lands that may be controlled by the permittee⁹⁷. The stocking rate for public land in the Red Hill FFR allotment would be unchanged at approximately 5.6 acres per AUM⁹⁸, a conservative stocking rate

⁹⁷ Percent public land for the Red Hill FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

⁹⁸ If BLM were to implement actions to maximize livestock use of forage production, approximately 3.1 and 3.2 acres would be required to support 1 AUM in the existing Quicksilver FFR and Stahle FFR allotment respectively in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the two existing allotments. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGET-2: Quicksilver FFR allotment).

consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the determination that Standards 1 and 4 are met in the existing Quicksilver FFR allotment, while current livestock management practices are not significant factors in the failure to meet rangeland health standards in the existing Stahle FFR allotment.

100 percent early seral; Stahle FFR allotment: 40 percent early seral and 60 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of slightly more than 3 acres per AUM if the ideal conditions were present in the Red Hill FFR allotment, the current permit is based on an allotment-wide stocking rate of 5.6 acres per AUM on public land. Standards 1 and 4 are met in the existing Quicksilver FFR allotment, while Standard 1 is met and current livestock grazing management practices are not significant factors in the failure to meet Standard 4 in the existing Stahle FFR allotment.

Table ALT-159: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Red Hill FFR allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Redband Trout (spawning)	NA	no use 3/15 to 6/15; 2 of 3 years	NA	NA
Spotted Frog (breeding)	NA	no use 5/1 to 6/15; 2 of 3 years	NA	NA
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years
Riparian/ Water Quality	NA	no use 7/1-9/30; 2 of 3 years	NA	NA

Permitted grazing use in the Red Hill FFR allotment would be unchanged from the existing permit with 47 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-160.

Table ALT-160: Permitted grazing use within the Red Hill FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
47 AUMs	0 AUMs	47 AUMs

The elevation of the Red Hill FFR allotment ranges from approximately 4,400 feet to more than 6,400 feet. As a result, the allotment is not accessible for livestock grazing in the middle of winter and early spring (12/15 to 3/31). The grazing schedule for the Red Hill FFR allotment, identified in Table ALT-161, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-161: Red Hill FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	7/16 to 12/15	7/16 to 12/15	4/1 to 12/15
2	4/1 to 6/30	7/16 to 12/15	10/1 to 12/15
3	7/16 to 12/15	4/1 to 12/15	7/16 to 12/15
4	4/1 to 12/15	7/1 to 12/15	7/1 to 12/15

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Red Hill FFR allotment would be defined as listed in Table ALT-162 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-162: Mandatory and other terms and conditions of the offered permit to graze livestock within the Red Hill FFR allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Red Hill FFR	79	Cattle	4/1	12/15	7*	Active	47

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Red Hill FFR allotment would be included in the permit offered:

1. Grazing use in the Red Hill FFR allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Alder Creek FFR allotment for the term of this grazing permit and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.

4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A crossing permit or similar authorization may be required prior to trailing livestock on public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.14.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Quicksilver FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 12 AUMs of permitted use in the Quicksilver FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.15 Red Mountain Allotment⁹⁹

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Red Mountain allotment. Current livestock grazing management practices are significant factors in not meeting Standards 1, 4, and 8 whereas significant progress is being made toward meeting Standards 2, 3, and 7. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to the allotment. Current livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 1, 3, 4, 5, 8, 9, and 12 for several Standards (see Appendix A).

2.4.15.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Red Mountain allotment with the same terms and conditions as those in the existing permits, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 8-year period between 2005 and 2012 has averaged 1,474 AUMs, with a maximum of 1,721 AUMs in 2008 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Rohl Hipwell would be authorized to graze cattle in all three pastures of the allotment from April 1 through May 30, with an authorized active use of 1,397 AUMs, while John Edwards would be authorized to graze cattle in pasture 1 of the allotment from October 1 to February 28 with an authorized active use of 324 AUMs. Authorized active use in the Red Mountain allotment would be reduced from 1,999 AUMs in the existing permits to 1,721 AUMs. The elimination of 278 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Red Mountain allotment under Alternative 1 is summarized in Table ALT-163.

⁹⁹ Alternative 1, the existing situation, would continue management of the public lands in the existing Red Mountain allotment as a livestock management unit. Alternatives 2, 3, and 4 would result in the reconfiguration of allotments in which Rohl Hipwell is currently authorized to graze cattle and create the proposed Fossil Creek, Pickett Creek, and Red Hill FFR allotments from the existing Red Mountain, Bridge Creek, Boone Peak, Quicksilver FFR, and Stahle FFR allotments. Livestock management terms and conditions that would be implemented in the proposed Fossil Creek allotment, pasture 1 of the existing Red Mountain allotment, and the proposed Pickett Creek allotment, pastures 2 and 3 of the existing Red Mountain allotment and additional pastures, are discussed in this chapter 2 Section and the chapter 3 Section under the existing Red Mountain allotment headings.

Table ALT-163: Permitted grazing use within the Red Mountain allotment with implementation of Alternative 1 – Current Situation

Permittee	Active Use	Suspension ¹⁰⁰	Permitted Use
Hipwell	1,397 AUMs	529 AUMs	1,926 AUMs
Edwards	324 AUMs	1,050 AUMs	1,374 UMS

Cattle grazing use in the three pastures of the Red Mountain allotment by Rohl Hipwell has occurred in recent years consistent with the cooperatively developed annual schematic of the pasture rotation. Similarly, dates of cattle grazing use in pasture 1 by John Edwards has occurred within the terms and conditions of the permit. Appendix B includes a summary of actual use reported by the permittees in recent years and indicates the treatments that would be implemented under Alternative 1, a continuation of management practices that have been recently implemented in the Red Mountain allotment. The grazing rotation under Alternative 1 is summarized in Table ALT-164.

Table ALT-164: Grazing schedules for the Red Mountain allotment under Alternative 1

Pasture	Hipwell	Edwards
1	4/1 to 4/20	10/1 to 2/28
2	4/21 to 5/10	No Use
3	5/11 to 5/30; 10/15 to 12/30	No Use

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-165 and the following numbered items.

Table ALT-165: Mandatory and other terms and conditions of the offered permit to graze livestock within the Red Mountain allotment with implementation of Alternative 1 – Current Situation

Allotment	Permittee	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00588 Red Mountain	Hipwell	745	Cattle	4/1	5/30	95*	Active	1,397
	Edwards			10/15	12/30			
	Edwards	65	Cattle	10/1	2/28	100	Active	324

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 0.3 miles of Hart Creek and 5.0 miles of Pickett Creek in allotment #588 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. The current signed grazing agreement limits livestock numbers to 450 head during the spring use period 4/1 to 5/30 in allotment #0588 (Hipwell permit only).

¹⁰⁰ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 3,578 AUMs to 3,300 AUMs would not result in an increase in suspension AUMs.

3. All use to be winter use restricted to pasture #01 in the Red Mountain allotment #0588 (Edwards permit only).
4. Turnout is subject to the Boise District range readiness criteria.
5. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
6. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
7. Changes to the scheduled use require prior approval.
8. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
9. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
10. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
11. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
12. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
13. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
14. Utilization may not exceed 50 percent of the current year's growth.
15. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.15.2 Alternative 2

Under Alternative 2, BLM would make changes to allotments boundaries consistent with applications for permit renewal received from two current permittees. Allotment boundary changes would result from a new grouping of pastures in allotments that Rohl Hipwell is currently authorized to graze cattle within. Pasture 1 of the existing Red Mountain allotment would be separated from the other two pastures of the allotment and would be the only pasture of the created Fossil Creek allotment¹⁰¹. Rohl Hipwell and John Edwards would be authorized to graze cattle in the newly created one-pasture Fossil Creek allotment.

Pastures 2 and 3 of the existing Red Mountain allotment, the one pasture of the existing Bridge Creek allotment, the one pasture of the existing Boone Peak allotment, and a holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment) would be combined to create the proposed Pickett Creek allotment, consistent with the application received from Rohl Hipwell and John Edwards on June 24, 2011. The Red Mountain allotment would no longer be an allotment administered by the Owyhee Field office, and its public land acreage would be divided between the created Fossil Creek and Pickett Creek allotments.

A summary of the allotment reconfiguration is provided in Table ALT-166 and Map RNGE-3.

¹⁰¹ The reconfiguration of pastures in the applications received identified the naming of created allotments based on existing allotment names. In an effort to avoid confusion, BLM applied new geographically based names to created allotments.

Table ALT-166: Summary of the reconfiguration of pastures within the existing Red Mountain, Bridge Creek, and Boone Peak allotments to create the Fossil Creek and Pickett Creek allotments

Existing Allotment / Pasture (number-name)	Proposed Allotment / Pasture (number-name)
Red Mountain / Pasture 1-Fossil Creek	Fossil Creek / Pasture 1-Fossil Creek
Red Mountain / Pasture 2-Pickett Creek	Pickett Creek / Pasture 1-Pickett Creek
Red Mountain / Pasture 3-Red Mountain	Pickett Creek / Pasture 2-Red Mountain
Bridge Creek / Pasture 1-Bridge Creek	Pickett Creek / Pasture 3-Bridge Creek
Boone Peak / Pasture 1-Boone Peak	Pickett Creek / Pasture 4-Boone Peak

2.4.15.2.1 Alternative 2 – Fossil Creek Allotment¹⁰²

Under Alternative 2, BLM would renew the livestock grazing permit for use in the created Fossil Creek allotment in accordance with terms and conditions within the applications and modification that were received from Rohl Hipwell and John Edwards. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete applications and modification are reproduced in Appendix D.

John Edwards would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 375 AUMs, as outlined in Table ALT-167.

Table ALT-167: John Edwards' permitted grazing use within the Fossil Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
375 AUMs	1,050 AUMs	1,425 AUMs

Similarly, Rohl Hipwell would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 400 AUMs, as outlined in Table ALT-168.

Table ALT-168: Rohl Hipwell's permitted grazing use within the Fossil Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
400 AUMs	100 AUMs	500 AUMs

In accordance with the clarification of the application received December 1, 2011, from John Edwards and the application as modified from Rohl Hipwell, the grazing schedule for the one pasture Fossil Creek allotment would be implemented as summarized in Table ALT-169.

Table ALT-169: Fossil Creek allotment grazing strategy with implementation of Alternative 2 – Applicant's Proposed Action

Pasture	Hipwell Scheduled Use	Edwards Scheduled Use
1	3/1 to 2/28*	10/1 to 2/28

* Annual grazing use will occur on a shorter period

¹⁰² Livestock management terms and conditions that would be implemented under Alternative 2 in the proposed Fossil Creek allotment (pasture 1 of the existing Red Mountain allotment) are discussed in this chapter 2 Section and the chapter 3 Section under this Fossil Creek allotment subheading under the existing Red Mountain allotment Alternatives headings. Livestock management terms and conditions that would be implemented under Alternative 2 in the proposed Pickett Creek allotment, pastures 2 and 3 of the existing Red Mountain allotment and additional pastures, are discussed in the chapter 2 Section and the chapter 3 Section under the subsequent Pickett Creek allotment subheadings.

Mandatory and other terms and conditions of the offered permits would be defined as listed in Table ALT-170 and the following numbered items.

Table ALT-170: Mandatory and other terms and conditions of the offered permits to graze livestock within the Fossil Creek allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Permittee	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
Fossil Creek	Hipwell	40	Cattle	3/1	2/28	83*	Active	400
	Edwards	75	Cattle	10/1	2/28	100	Active	375

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. Grazing use in the Fossil Creek allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Annual grazing use will occur on a shorter period than the year-long schedule identified (Hipwell permit only).
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year’s growth.

2.4.15.2.2 Alternative 2 – Pickett Creek Allotment

Under Alternative 2, BLM would renew the livestock grazing permit for use in the created Pickett Creek allotment in accordance with terms and conditions within the application and the amendment that were received from Rohl Hipwell. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Rohl Hipwell would be offered a permit to graze cattle in the Pickett Creek allotment for a term of 10 years with an active use of 3,982 AUMs¹⁰³, as outlined in Table ALT-171.

Table ALT-171: Rohl Hipwell's permitted grazing use within the Pickett Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
3,982 AUMs	1,432 AUMs	5,414 AUMs

In accordance with the application as amended from Rohl Hipwell, the grazing schedule with flexibility in the period of authorized annual use for the four pastures of Pickett Creek allotment would be implemented as summarized in Table ALT-172.

Table ALT-173: Pickett Creek allotment grazing strategy with implementation of Alternative 2 – Applicant's Proposed Action

Pasture	Hipwell Scheduled Use
1	3/1 to 2/28*
2	3/1 to 2/28*
3	3/1 to 2/28*
4	3/1 to 2/28*

* Annual grazing use will occur on a shorter period

Mandatory and other terms and conditions of the offered permits would be defined as listed in Table ALT-174 and the following numbered items.

Table ALT-174: Mandatory and other terms and conditions of the offered permit to graze livestock within the Pickett Creek allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Pickett Creek	467	Cattle	3/1	2/28	71*	Active	3,982

* Application of percent public land to the offered permit is subject to submission of documentation identifying control by the permittee of state and/or private land in the allotment.

Terms and conditions:

1. Grazing use in the Pickett Creek allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Annual grazing use will occur on a shorter period.
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and

¹⁰³ The applications received from permittees requesting reconfiguration of allotments did not request either an increase or a decrease in authorized active use or permitted use within the combined allotments.

livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.

11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
13. Utilization may not exceed 50 percent of the current year's growth.

Applications received proposed a division fence for pasture 2 of the created Pickett Creek allotment (pasture 3 of the existing Red Mountain allotment). Similarly, the applications requested that a spring be developed and a trough placed in the Pickett Creek allotment pasture 3 (existing Bridge Creek allotment pasture 1) within the area of Township 6 South, Range 2 West, Section 13, East ½. Additionally, the modification to the application received by BLM on July 29, 2013, from Rohl Hipwell includes application to clear areas of juniper domination within a 300-foot radius of developed springs, applies to clear juniper domination along approximately 20 to 400 acres of the headwater areas of Bridge Creek, applies for seeding of low-elevation areas for the reintroduction of deep-rooted perennial species, applies for large expanses of rangeland to be cleared of juniper by cutting or burning, applies for large expanses of rangeland dominated by too-dense sagebrush to be mechanically thinned or burned, and applies to assess with BLM the underlying factor(s) for spring or other riparian areas function and reserve the opportunity to apply to fence and/or develop and fence such areas.

These proposed projects would not be considered for analysis in this EA, as summarized in Section 2.4 (Alternatives Considered but not Analyzed in Detail). Although these projects may contribute toward ease of livestock management or improved function of upland or riparian function, the projects are not consistent with the purpose and need identified for this NEPA document in that these projects are not livestock management project required to facilitate the application of grazing management practices that promote significant progress toward, or the attainment and maintenance of, the standards. Analysis of consequences of any new project construction or reconstruction may be addressed through separate NEPA analysis specific to the proposed project(s) and will not be included in this NEPA document, because implementation of livestock management actions identified in the permit renewal applications are not dependent on construction of these projects.

2.4.15.3 Alternative 3

Under Alternative 3, BLM would make changes to allotment boundaries for the Red Mountain, Bridge Creek, and Boone Peak allotments, as described under Alternative 2 above (Section 2.4.15.2). The Fossil Creek allotment would be created from the existing pasture 1 of the Red Mountain allotment, while the created Pickett Creek allotment would be created from the existing pastures 2 and 3 of the Red Mountain allotment, the one pasture Bridge Creek allotment, and the one pasture Boone Peak allotment. The grazing schedules for the Fossil Creek and Pickett Creek allotments under Alternative 3 were developed in a manner that would allow the two allotments to be administered as separate allotments or one allotment.

2.4.15.3.1 Alternative 3 – Fossil Creek Allotment

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Fossil Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-175).

Table ALT-175: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Fossil Creek allotment under Alternative 3

Resource	Pasture 1
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30 1 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years*
Soils	no use 3/1 to 5/15; 1 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 1 out of 3 years**

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Fossil Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the one pasture of the Fossil Creek allotment at approximately 10 acres per AUM¹⁰⁴ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

John Edwards would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 172 AUMs, as outlined in Table ALT-176.

Table ALT-176: John Edwards' permitted grazing use within the Fossil Creek allotment with implementation of Alternative 3

Active Use	Suspension ¹⁰⁵	Permitted Use
172 AUMs	1,050 AUMs	1,222 AUMs

Similarly, Rohl Hipwell would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 183 AUMs, as outlined in Table ALT-177.

¹⁰⁴ If BLM were to implement actions to maximize livestock use of forage production, approximately 7.0 acres would be required to support 1 AUM in the Fossil Creek pasture of the Fossil Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Fossil Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Red Mountain allotment: 70 percent early seral, 20 percent mid-seral, and 10 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the one pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 7.0 acres per AUM if the ideal conditions were present in the Fossil Creek allotment, the current permits for use in the Red Mountain allotment once prorated for use in pasture 1 (John Edwards full active use that is limited to pasture 1 only and 400 AUMs of active use that has been made in pasture 1 in recent years by Rohl Hipwell) are based on a stocking rate of 4.6 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 4, and 8 in the Red Mountain allotment.

¹⁰⁵ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,425 AUMs to 1,222 AUMs would not result in an increase in suspension AUMs.

Table ALT-177: Rohl Hipwell's permitted grazing use within the Fossil Creek allotment with implementation of Alternative 3

Active Use	Suspension ¹⁰⁶	Permitted Use
183 AUMs	100 AUMs	283 AUMs

The grazing schedule for the Fossil Creek allotment, identified in Table ALT-178, would be authorized and its implementation would be included as a term and condition of the permits offered.

Table ALT-178: Grazing schedules for the Fossil Creek allotment under Alternative 3

Year	Hipwell	Edwards
1	4/1 to 4/20	10/1 to 2/28
2	4/1 to 4/20	10/1 to 2/28
3	11/1 to 11/20	10/1 to 2/28

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permits for grazing use in the Fossil Creek allotment would be defined as listed in Table ALT-179 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-179: Mandatory and other terms and conditions of the offered permit to graze livestock within the Fossil Creek allotment with implementation of Alternative 3

Allotment	Permittee	Year	Livestock		Grazing Period		% PL	Type Use	AUMs
			Number	Kind	Begin	End			
Fossil Creek	Edwards	All	34	Cattle	10/1	2/28	100	Active	172
	Hipwell	1 & 2	335	Cattle	4/1	4/20	83*	Active	183
	Hipwell	3	335	Cattle	11/1	11/20	83*	Active	183

* Application of percent public land to the offered permit is subject to submission of documentation identifying control by the permittee of state and/or private land in the allotment.

The following grazing permit terms and conditions specific to the Fossil Creek allotment would be included in the permit offered:

1. Grazing use of the Fossil Creek allotment will be in accordance with the grazing schedule providing for a 3-year rotation identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Livestock numbers are at the discretion of the permittee, as long as grazing occurs within the specified dates and active use AUMs are not exceeded (Edwards permit only).
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Fossil Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.

¹⁰⁶ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 500 AUMs to 283 AUMs would not result in an increase in suspension AUMs.

4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.15.3.2 Alternative 3 – Pickett Creek Allotment

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Pickett Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-180).

Table ALT-180: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Pickett Creek allotment under Alternative 3

Resource	Pasture 1-Pickett Creek	Pasture 2-Red Mountain	Pasture 3-Bridge Creek	Pasture 4-Boone Peak
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30; 1 of 3 years**	no use 6/15 to 9/30; 1 of 3 years**	no use 7/1-9/30; 1 of 3 years**	no use 7/1-9/30; 1 of 3 years**

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

**When grazing occurs in pastures with riparian resources during specified time constraint periods, limit the intensity of use to 1) Stubble height no less than 6 in, 2) Woody browse use no greater than 30 percent incidence of use on most recent year's lead growth, and 3) Bank alteration no greater than 10 percent (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Pickett Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for low elevation pastures (pastures 1 and 2) of the Pickett Creek allotment at approximately 10 acres per AUM and for high elevation pastures (pastures 3 and 4) at approximately 5 acres per AUM¹⁰⁷ (Appendix C). These stocking rates are conservative rates consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Rohl Hipwell would be offered a 10-year permit to graze 324 head of cattle with permitted grazing use in the Pickett Creek allotment as summarized in Table ALT-181. Compared to authorized active use currently authorized in the pastures composing Pickett Creek allotment, Alternative 3 reduce permitted use from 5,414 AUMs to 2,901 AUMs. The elimination of 2,515 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-181: Permitted grazing use within the Pickett Creek allotment with implementation of Alternative 3

Active Use	Suspension ¹⁰⁸	Permitted Use
1,467 AUMs	1,432 AUMs	2,899 AUMs

The grazing schedule for the Pickett Creek allotment, identified in Table ALT-182, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-182: Pickett Creek allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	4/21 to 5/31 *	4/21 to 5/31 *	Rest
2	6/1 to 7/14 *	Rest	4/21 to 5/31 *
3	Rest	6/1 to 7/14 *	6/1 to 7/14 *

¹⁰⁷ If BLM were to implement actions to maximize livestock use of forage production, approximately 6.3 and 5.5 acres would be required to support 1 AUM in pastures 1 and 2 of the Pickett Creek allotment respectively in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Similarly, approximately 2.7 and 3.6 acres would be required to support 1 AUM in pastures 3 and 4 respectively to support 1 AUM. These ideal conditions are not present within the Pickett Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Red Mountain allotment: 70 percent early seral, 20 percent mid-seral, and 10 percent late seral; Bridge Creek allotment: 35 percent early seral, 50 percent mid seral, and 15 percent late seral; Boone Peak allotment: 55 percent early seral, 20 percent mid-seral, and 25 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of approximately 6.0 acres per AUM within the two lower elevation pastures and approximately 3.0 acres per AUM within the two higher elevation pastures if the ideal conditions were present in the Pickett Creek allotment, the current permits are based on an average stocking rate of approximately 9.1 acres per AUM on public land in the two lower elevation pastures and 4.4 acres per AUM on public land in the two higher elevation pastures. Current livestock grazing management practices are significant factors in not meeting Standards 1, 4, and 8 in the Red Mountain allotment, Standards 2, 3, and 8 in the Bridge Creek allotment, and Standards 7 in the Boone Peak allotment.

¹⁰⁸ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 5,414 AUMs to 2,899 AUMs would not result in an increase in suspension AUMs.

Pasture	Year 1	Year 2	Year 3
4	7/15 to 10/31 **	7/15 to 10/31 **	10/1 to 10/31

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6 in, woody browse use no greater than 30 percent incidence of use on most recent year's leader growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Pickett Creek allotment would be defined as listed in Table ALT-183 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-183: Mandatory and other terms and conditions of the offered permit to graze livestock within the Pickett Creek allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Pickett Creek	324	Cattle	4/21	10/31	71*	Active	1,467

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Box T allotment would be included in the permit offered:

1. Grazing use of the Pickett Creek allotment will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Pickett Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4 inch stubble will be left on herbaceous vegetation within the riparian area along 0.3 miles of Hart Creek and 5.0 miles of Pickett Creek at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
4. Approval by the authorized officer is required prior to salt placement within and adjacent to Cinnabar Mountain ACEC for maximum protection of identified resource values. Domestic grazing use (authorized active use) will not be increased within the ACEC.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.

7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
9. Utilization may not exceed 50 percent of the current year's growth.

2.4.15.4 Alternative 4

Under Alternative 4, BLM would make changes to allotment boundaries for the Red Mountain, Bridge Creek, and Boone Peak allotments, as described under Alternative 2 above (Section 2.4.15.2). The Fossil Creek allotment would be created from the existing pasture 1 of the Red Mountain allotment, while the created Pickett Creek allotment would be created from the existing pastures 2 and 3 of the Red Mountain allotment, the one pasture Bridge Creek allotment, and the one pasture Boone Peak allotment. The grazing schedules for the Fossil Creek and Pickett Creek allotments under Alternative 4 were developed in a manner that would allow the two allotments to be administered as separate allotments or one allotment.

2.4.15.4.1 Alternative 4 – Fossil Creek Allotment

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Fossil Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-184). High-value resources present in the Fossil Creek allotment, as defined in Section 2.2.4, are limited to sage-grouse pre-laying/lekking habitats.

ALT-184: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Fossil Creek allotment under Alternative 4

Resource	Pasture 1
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years
Soils	no use 3/1 to 5/15; 2 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30; 2 of 3 years

BLM would establish a grazing schedule under Alternative 4 for the Fossil Creek allotment that implements the above constraints. Once that schedule is established, the number of cattle would be defined that would lead to a stocking rate for the allotment resulting in no heavier use than would occur at 10 acres per AUM¹⁰⁹ (Appendix C). This is a conservative stocking rate consistent with ecological site

¹⁰⁹ If BLM were to implement actions to maximize livestock use of forage production, approximately 7.0 acres would be required to support 1 AUM in the Fossil Creek pasture of the Fossil Creek allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Fossil Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Red Mountain allotment: 70 percent early seral, 20 percent mid-seral, and 10 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the one pasture. In addition, measured utilization includes vegetation removed

potential within the allotment, as limited by inventoried condition, water availability, topography, and appropriate seasons of grazing use.

John Edwards would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 172 AUMs, as outlined in Table ALT-186.

Table ALT-186: John Edwards' permitted grazing use within the Fossil Creek allotment with implementation of Alternative 4

Active Use	Suspension ¹¹⁰	Permitted Use
172 AUMs	1,050 AUMs	1,222 AUMs

Similarly, Rohl Hipwell would be offered a permit to graze cattle in the Fossil Creek allotment for a term of 10 years with an active use of 183 AUMs, as outlined in Table ALT-187.

Table ALT-187: Rohl Hipwell's permitted grazing use within the Fossil Creek allotment with implementation of Alternative 4

Active Use	Suspension ¹¹¹	Permitted Use
183 AUMs	100 AUMs	283 AUMs

The grazing schedule for the Fossil Creek allotment, identified in Table ALT-188, would be authorized and its implementation would be included as a term and condition of the permits offered.

Table ALT-188: Grazing schedules for the Fossil Creek allotment under Alternative 4

Year	Hipwell	Edwards
1	4/1 to 4/20	10/1 to 2/28
2	11/1 to 11/20	10/1 to 2/28
3	11/1 to 11/20	10/1 to 2/28

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permits for grazing use in the Fossil Creek allotment would be defined as listed in Table ALT-189 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-189: Mandatory and other terms and conditions of the offered permit to graze livestock within the Fossil Creek allotment with implementation of Alternative 3

Allotment	Permittee	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
Fossil Creek	Edwards	34	Cattle	10/1	2/28	100	Active	172
	Hipwell	335	Cattle	11/1	11/20	83*	Active	183

by native herbivores, including insects, and harvest efficiency. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 7.0 acres per AUM if the ideal conditions were present in the Fossil Creek allotment, the current permits for use in the Red Mountain allotment once prorated for use in pasture 1 (John Edwards full active use that is limited to pasture 1 only and 400 AUMs of active use that has been made in pasture 1 in recent years by Rohl Hipwell) are based on a stocking rate of 4.6 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 4, and 8 in the Red Mountain allotment.

¹¹⁰ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,425 AUMs to 1,222 AUMs would not result in an increase in suspension AUMs.

¹¹¹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 500 AUMs to 283 AUMs would not result in an increase in suspension AUMs.

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Fossil Creek allotment would be included in the permit offered:

1. Grazing use of the Fossil Creek allotment will be in accordance with the grazing schedule providing for a three-year rotation identified in the final decision of the Owyhee Field Office Manager dated _____.
2. Livestock numbers are at the discretion of the permittee, as long as grazing occurs within the specified dates and active use AUMs are not exceeded (Edwards permit only).
3. A crossing permit for trailing of livestock associated with the grazing authorization in the Fossil Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.15.4.2 Alternative 4 – Pickett Creek Allotment

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Pickett Creek allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-190). High-value resources present in the Pickett Creek allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in pastures 1, 2, and 3; sage-grouse late brood-rearing/summer habitats in pasture 4; and 1.0 or more mile(s) of perennial streams occur in all pastures.

Table ALT-190: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Pickett Creek allotment under Alternative 4

Resource	Pasture 1-Pickett Creek	Pasture 2-Red Mountain	Pasture 3-Bridge Creek	Pasture 4-Boone Peak
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	NA
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years
Sage-grouse (late brood-rearing/summer)	NA	no use 7/1 to 8/30; 2 of 3 years	no use 7/1 to 8/30; 2 of 3 years	NA
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	NA	NA	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/15; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 6/15 to 9/30 all years*	no use 6/15 to 9/30 all years*	no use 7/1-9/30* all years*	no use 7/1-9/30 all years*

* Pasture contains high-value riparian/ fish habitat

BLM would establish a grazing schedule under Alternative 4 for the Pickett Creek allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate at approximately 10 acres per AUM for low-elevation pastures (pastures 1 and 2) of the Pickett Creek allotment and at approximately 5 acres per AUM for high-elevation pastures (pastures 3 and 4)¹¹² (Appendix C). These stocking rates are conservative rates consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

Rohl Hipwell would be offered a 10-year permit to graze 183 head of cattle with permitted grazing use in the Pickett Creek allotment as summarized in Table ALT-191. When compared to authorized active use currently authorized in the pastures composing Pickett Creek allotment, Alternative 4 reduces permitted use from 5,416 AUMs to 1,868 AUMs. The elimination of 3,548 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-191: Permitted grazing use within the Pickett Creek allotment with implementation of Alternative 4

Active Use	Suspension ¹¹³	Permitted Use
436 AUMs	1,432 AUMs	1,868 AUMs

The grazing schedule for the Pickett Creek allotment, identified in Table ALT-192, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-192: Pickett Creek allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	4/21 to 6/30	Rest	Rest
2	Rest	4/21 to 6/30	Rest
3	Rest	Rest	4/21 to 6/30
4	10/1 to 10/31	10/1 to 10/31	10/1 to 10/31

¹¹² If BLM were to implement actions to maximize livestock use of forage production, approximately 6.3 and 5.5 acres would be required to support 1 AUM in pastures 1 and 2 of the Pickett Creek allotment respectively in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. Similarly, approximately 2.7 and 3.6 acres would be required to support 1 AUM in pastures 3 and 4 respectively to support 1 AUM. These ideal conditions are not present within the Pickett Creek allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Red Mountain allotment: 70 percent early seral, 20 percent mid-seral, and 10 percent late seral; Bridge Creek allotment: 35 percent early seral, 50 percent mid-seral, and 15 percent late seral; Boone Peak allotment: 55 percent early seral, 20 percent mid-seral, and 25 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of approximately 6.0 acres per AUM within the two lower elevation pastures and approximately 3.0 acres per AUM within the two higher elevation pastures if the ideal conditions were present in the Pickett Creek allotment, the current permits are based on an average stocking rate of approximately 9.1 acres per AUM on public land in the two lower elevation pastures and 4.4 acres per AUM on public land in the two higher elevation pastures. Current livestock grazing management practices are significant factors in not meeting Standards 1, 4, and 8 in the Red Mountain allotment, Standards 2, 3, and 8 in the Bridge Creek allotment, and Standard 7 in the Boone Peak allotment.

¹¹³ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 5,416 AUMs to 1,868 AUMs would not result in an increase in suspension AUMs.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Pickett Creek allotment would be defined as listed in Table ALT-193 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-193: Mandatory and other terms and conditions of the offered permit to graze livestock within the Pickett Creek allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
Pickett Creek	183	Cattle	4/21	6/1	71*	Active	436
			10/1	10/31			

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Pickett Creek allotment would be included in the permit offered:

1. Grazing use of the Pickett Creek allotment will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Pickett Creek allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 0.3 miles of Hart Creek and 5.0 miles of Pickett Creek at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
4. Approval by the authorized officer is required prior to salt placement within and adjacent to Cinnabar Mountain ACEC for maximum protection of identified resource values. Domestic grazing use (authorized active use) will not be increased within the ACEC.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.15.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Red Mountain allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 3,678 AUMs of permitted use in the Red Mountain FFR allotment would be

cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.16 Stahle FFR Allotment

Standards 4 (Native Plant Communities) and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Stahle FFR allotment, but current livestock grazing management practices are not significant factors in not meeting these Standards. Standard 1 (Watersheds) is met and Standards 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 5 (Seedings), 6 (Exotic Plant Communities, other than Seedings), and 7 (Water Quality) are not applicable to the allotment (see Appendix A).

2.4.16.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Stahle FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Stahle FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of that discretion.

Permitted grazing use in the Stahle FFR allotment would be unchanged from the existing permit with 35 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-194.

Table ALT-194: Permitted grazing use within the Alder FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
35 AUMs	0 AUMs	35 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-195 and the following numbered items.

Table ALT-195: Mandatory and other terms and conditions of the offered permit to graze livestock within the Stahle FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00641 Stahle FFR	34	Cattle	12/1	12/31	100	Active	35

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0641 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.

5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.16.2 Alternatives 2, 3, and 4

As identified in the discussion of Alternatives 2, 3, and 4 under the heading for the Quicksilver FFR allotment (Section 2.4.14), BLM would make changes to allotments boundaries that would result from a grouping of pastures where Rohl Hipwell is currently authorized to graze cattle. The existing Quicksilver FFR and Stahle FFR allotments would be combined to create the new Red Hill FFR allotment, consistent with the application received from Rohl Hipwell on June 24, 2011. The Stahle FFR allotment would no longer be an allotment administered by the Owyhee Field office, but its public land acreage would be managed as one of four pastures of the Red Hill FFR allotment.

See Section 2.4.14 of this EA for the description of Alternative 2, 3, and 4 actions that would be proposed.

2.4.16.3 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Stahle FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 35 AUMs of permitted use in the Stahle FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.17 Steiner FFR Allotment

Standards 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Steiner FFR allotment. Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), and 3 (Stream Channel/Floodplain) are met, while Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to resources present within the allotment. Current livestock management practices are not significant factors in failing to meet Standards 4, 7, and 8.

2.4.17.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Steiner FFR allotment consistent with the summarized actions that have led to the current conditions. The same terms and conditions of the existing permit would be included in the permit offered. The number of livestock and season of use on the Steiner FFR allotment, an allotment that includes a high percentage of private land, would be unchanged from the existing permit and at the discretion of the permittee. Appendix B provides a summary of actual use reported in recent years and provides information regarding the permittee's implementation of the permit.

Permitted grazing use in the Steiner FFR allotment would be unchanged from the existing permit with 98 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-196.

Table ALT-196: Permitted grazing use within the Steiner FFR allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension	Permitted Use
98 AUMs	0 AUMs	98 AUMs

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-197 and the following numbered items.

Table ALT-197: Mandatory and other terms and conditions of the offered permit to graze livestock within the Steiner FFR allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00613 Steiner FFR	96	Cattle	12/1	12/31	100	Active	98

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0613 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range

improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.

9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

2.4.17.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Steiner FFR allotment in accordance with terms and conditions of the existing permit and as modified by the application received from John Steiner. The number of livestock and season of use on the Steiner FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. Although not included in the application, the period of grazing use identified on the permit would be changed to 4/1 through 4/30; April use is the earliest use identified in recent actual use reports and would provide for payment of the annual grazing billing prior to use. The complete application is reproduced in Appendix D.

Permitted grazing use in the Steiner FFR allotment would be unchanged from the existing permit with 98 AUMs active use authorized and no suspension AUMs as summarized in Table ALT-198.

Table ALT-198: Permitted grazing use within the Steiner FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
98 AUMs	0 AUMs	98 AUMs

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-199 and the following numbered items.

Table ALT-199: Mandatory and other terms and conditions of the offered permit to graze livestock within the Steiner FFR allotment with implementation of Alternative 2 – Applicant's Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00613 Steiner FFR	98	Cattle	4/1	4/30	100	Active	98

Terms and conditions:

1. The number of livestock and season of use on the fenced federal range (FFR) allotment #0613 are at your discretion.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.

7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

The application for renewal of the grazing permit for use in the Louisa Creek and Steiner FFR allotments included a request that AUMs in the Fossil Creek¹¹⁴ allotment (Fossil Butte #535) be reinstated. Preference to graze livestock in the Fossil Butte allotment previously held by Charles Steiner (prior to 1994) is outside the scope of this permit renewal process that would renew authorizations to graze livestock in Group 3 allotments. Whereas billings prior to 1994 included use in the Fossil Butte allotment, Mr. Steiner's 1997 permit (operator number 111475) no longer recognized authorization to graze cattle in the Fossil Butte allotment.

2.4.17.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Steiner FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present (see Table ALT-200). While the season of grazing use authorized and total AUMs used would be defined, the number of livestock on the Steiner FFR allotment, an allotment that includes a high percentage of private land, would be at the discretion of the permittee. The stocking rate for public land in the Steiner FFR allotment would be unchanged at approximately 16.1 acres per AUM¹¹⁵, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography.

¹¹⁴ Note that a new allotment named the Fossil Creek allotment and composed of pasture 1 of the existing Red Mountain allotment is identified in alternatives 2 through 4 under the Red Mountain heading (Section 2.4.15). The Fossil Creek allotment referred to in reference to the Steiner permit is unrelated to the proposal to create a proposed Fossil Creek allotment as a part of alternatives in this EA.

¹¹⁵ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.3 acres would be required to support 1 AUM on public land in the Steiner FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Steiner FFR allotment: 55 percent early seral, 45 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.3 acres per AUM if the ideal conditions were present in the Steiner FFR allotment, the current permit is based on an allotment-wide stocking rate of 16.1 acres per AUM on public land. Current livestock grazing management practices are not significant factors in the failure to meet Standards 4, 7, and 8 in the Steiner FFR allotment.

Table ALT-200: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Steiner FFR allotment under Alternative 3

Resource	Pasture 1	Pasture 2
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	NA
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years	NA
Spotted Frog (breeding)	no use 5/1 to 6/15; 1 of 3 years	NA
Vegetation	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 7/1-9/30; 1 of 3 years	NA

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

Permitted grazing use in the Steiner FFR allotment would be unchanged from the existing permit with 98 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-201.

Table ALT-201: Permitted grazing use within the Steiner FFR allotment with implementation of Alternative 3

Active Use	Suspension	Permitted Use
98 AUMs	0 AUMs	98 AUMs

The elevation of public land within the Steiner FFR allotment ranges from approximately 5,200 feet to more than 6,200 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/16 to 3/31). The dates of available grazing for the Steiner FFR allotment identified in Table ALT-202 would be authorized and its implementation would be included as a term and condition of the permit offered. Livestock numbers on public, private, and state lands within the allotment would be determined at the discretion of the permittee, as long as the number of AUMs grazed from public land is not exceeded and unacceptable impacts to public land resources do not result.

Table ALT-202: Steiner FFR allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	4/1 to 11/15 * **	7/16 to 11/15 **	4/1 to 6/30; 10/1 to 11/15 *
2	7/16 to 11/15	4/1 to 11/15 *	4/1 to 11/15 *

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

** Riparian intensity of use limited to stubble height no less than 6 in, woody browse use no greater than 30 percent incidence of use on most recent year's leader growth, and bank alteration no greater than 10 percent at the end of the riparian growing season

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Steiner FFR allotment would be defined as listed in Table ALT-203 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-203: Mandatory and other terms and conditions of the offered permit to graze livestock within the Steiner FFR allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00613 Steiner FFR	98	Cattle	4/1	4/30	100	Active	98

The following grazing permit terms and conditions specific to the Steiner FFR allotment would be included in the permit offered:

1. Dates of availability of the Steiner FFR allotment (0613) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. The number of livestock authorized on the Steiner FFR allotment (0606) is at permittee's discretion, as long as authorized active use of 98 AUMs from public lands is not exceeded.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.17.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Steiner FFR allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within the allotment where identified resources are present and additionally protect and enhance high-value resources (see Table ALT-204). High-value resources present in the Steiner FFR allotment, as defined in Section 2.2.4, are limited to sage-grouse pre-laying/lekking habitats and 1.0 or more mile(s) of perennial streams occur in pasture 1.

In addition to defining the season of grazing use authorized, the maximum number of livestock on the Steiner FFR allotment, an allotment that includes a high percentage of private land, would be defined based on percent public land. Percent public land would be calculated by the proportion of livestock forage available on public lands within the allotment compared to the total available from both public

land and lands that may be controlled by the permittee¹¹⁶. Active AUMs authorized on public land within the Steiner FFR allotment would be increased to 157 AUMs, resulting in the stocking rate for public land in the Steiner FFR allotment of approximately 10 acres per AUM¹¹⁷, a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and the determination that livestock grazing management practices are not a significant factor toward not meeting land health standards.

Table ALT-204: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Steiner FFR allotment under Alternative 4

Resource	Pasture 1	Pasture 2
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	NA
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	NA
Sage-grouse (late brood-rearing/summer)	NA	NA
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years	NA
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years	NA
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 7/1-9/30; all years*	NA

* Pasture contains high-value riparian/ fish habitat

Permitted grazing use in the Steiner FFR allotment would be increased from the existing permit with 98 AUMs active use authorized and no suspension AUMs, as summarized in Table ALT-205.

¹¹⁶ Percent public land for the Steiner FFR allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions. With percent public land calculated, the maximum number of cattle authorized on all land ownerships in the allotment would be defined.

¹¹⁷ If BLM were to implement actions to maximize livestock use of forage production, approximately 4.3 acres would be required to support 1 AUM on public land in the Steiner FFR allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Steiner FFR allotment: 55 percent early seral, 45 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the allotment. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 4.3 acres per AUM if the ideal conditions were present in the Steiner FFR allotment, the current permit is based on an allotment-wide stocking rate of 16.1 acres per AUM on public land. Current livestock grazing management practices are not significant factors in the failure to meet Standards 4, 7, and 8 in the Steiner FFR allotment.

Table ALT-205: Permitted grazing use within the Steiner FFR allotment with implementation of Alternative 4

Active Use	Suspension	Permitted Use
157 AUMs	0 AUMs	157 AUMs

The elevation of public land within the Steiner FFR allotment ranges from approximately 5,200 feet to more than 6,200 feet. As a result, the allotment is not accessible for livestock grazing in the winter and spring (11/16 to 3/31). The grazing schedule for the Steiner FFR allotment identified in Table ALT-206 would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-206: Steiner FFR allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	10/1 to 11/15	10/1 to 11/15	4/1 to 6/30; 10/1 to 11/15
2	4/1 to 11/15	7/16 to 11/15	7/16 to 11/15

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Steiner FFR allotment would be defined as listed in Table ALT-207 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-207: Mandatory and other terms and conditions of the offered permit to graze livestock within the Steiner FFR allotment with implementation of Alternative 4

Allotment	Year	Livestock		Grazing Period		% PL	Type Use	AUMs
		Number	Kind	Begin	End			
00613 Steiner FFR	1	104	Cattle	4/1	11/15	20	Active	157
	2	194	Cattle	7/16	11/15	20	Active	157
	3	111	Cattle	4/1 7/16	6/30 11/15	20	Active	157

The following grazing permit terms and conditions specific to the Steiner FFR allotment would be included in the permit offered:

1. Grazing use in the Steiner FFR allotment (0613) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. While cattle numbers authorized in the Steiner FFR allotment will be restricted to no more than 104 head in year 1 of the schedule, cattle numbers authorized in year 2 will be restricted to no more than 194 head, and in year 3 will be restricted to no more than 111 head, with the shorter periods of authorized use.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.

6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.17.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Steiner FFR allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 98 AUMs of permitted use in the Steiner FFR allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.18 Toy Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Toy allotment. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8. Current livestock management practices are not significant causal factors for not meeting Standard 7. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 1, 3, 4, 5, 7, 8, 9, and 12 for several Standards (see Appendix A).

2.4.18.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Toy allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the ten-year period between 2003 and 2012 has averaged 279 AUMs, with a maximum of 625 AUMs in 2006 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Scott and Sherri Nicholson would be authorized to graze cattle in the allotment from May 1 through June 30 and also from October 1 through November 15, with an authorized active use of 625 AUMs. Authorized active use in the Toy allotment would be reduced from 940 AUMs in the existing permits to 625 AUMs. The elimination of 315 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Toy allotment under Alternative 1 is summarized in Table ALT-208.

Table ALT-208: Permitted grazing use within the Toy allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension¹¹⁸	Permitted Use
625 AUMs	313 AUMs	938 AUMs

¹¹⁸ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,253 AUMs to 938 AUMs would not result in an increase in suspension AUMs.

Livestock grazing use in the Toy allotment would be implemented with the grazing schedule limited by the permit and consistent with the 1997 decision and actual use reported between 2003 and 2012. Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is displayed in Table ALT-209.

Table ALT-209: Typical grazing schedules for the Toy allotment derived from recent reported actual use

Pasture	Year 1	Year 2
1 and 2	5/1 to 6/30	10/1 to 11/15
3 and 4	10/1 to 11/15	5/1 to 6/30

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-210 and the following numbered items.

Table ALT-210: Mandatory and other terms and conditions of the offered permit to graze livestock within the Toy allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00533	177	Cattle	5/1	6/30	100	Active	625
Toy	177	Cattle	10/1	11/15	100	Active	

Terms and conditions:

1. A minimum of 4-inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0533 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.

13. United States District Court for the District of Idaho imposed terms and conditions

- Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
- Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
- Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
- Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.18.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Toy allotment in accordance with terms and conditions within the application received June 13, 2013, from Scott Nicholson, and clarified November 4, 2013. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application and clarification notes are reproduced in Appendix D.

Scott and Sherri Nicholson would be offered a grazing permit for a term of 10 years with an active use of 940 AUMs as outlined in Table ALT-211 and with no change from the current permit.

Table ALT-211: Permitted grazing use within the Toy allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
940 AUMs	313 AUMs	1,253 AUMs

In accordance with the application and clarification, the grazing strategy for pastures of the Toy allotment identified in Table ALT-212 would be established and authorized, with noted flexibility as a term and condition of the permit offered. Grazing would be authorized as a split season with use of public land in the Toy allotment between May 1 and June 30, no use between July 1 and September 30, and use between October 1 and November 15.

Table ALT-212: Toy allotment grazing strategy with implementation of Alternative 2 – Applicant's Proposed Action

Pasture	Scheduled Use
Pasture 1 (*North Boulder)	5/1 to 6/30 one year and 10/1 to 11/15 the alternate year
Pasture 2 (**Meadow Creek and Bridge Creek)	5/1 to 6/30 one year and 10/1 to 11/15 the alternate year
Pasture 3 (**Meadow Creek and Bridge Creek)	5/1 to 6/30 one year and 10/1 to 11/15 the alternate year
Pasture 4 (**North Florence)	5/1 to 6/30 one year and 10/1 to 11/15 the alternate year
Upper Tippen: Private land	Not applicable
Lower Tippen: Private land	Not applicable

* The application received identified the pasture name North Boulder. Although an east/west oriented fence separates a northern portion from a southern portion of this pasture, BLM GIS data identify one pasture that may be managed as two units as long as the division fence serves as a barrier to livestock movement.

** The application received identified the pasture name Meadow Creek and Bridge Creek. A division fence parallels Bridge Creek and separates pastures 1 and 2.

*** The application received identified the pasture name North Florence, consistent with the BLM GIS pasture name

Grazing schedule flexibility:

- All dates identified in terms and conditions of the permit will be determined by the availability of feed and water and are for a reference point only.
- No pasture will be used in consecutive years during the period between 5/1 and 6/30.
- The number of cattle may vary, although use within the Toy allotment will not exceed 940 AUMs.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-213 and the following numbered items.

Table ALT-213: Mandatory and other terms and conditions of the offered permit to graze livestock within the Toy allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00533	267	Cattle	5/1	6/30	100	Active	940
Toy	267	Cattle	10/1	11/15			

Terms and conditions:

1. Grazing use in the Toy allotment will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in accordance with the decision will be available.
2. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0533 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
3. Turnout is subject to the Boise District range readiness criteria.
4. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
5. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
6. Changes to the scheduled use require prior approval.
7. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
8. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
9. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
10. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
11. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
12. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.

13. Utilization may not exceed 50 percent of the current year's growth.

2.4.18.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Toy allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-214).

Table ALT-214: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Toy allotment under Alternative 3

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	NA	NA
Redband Trout (spawning)	NA	NA	NA	no use 3/15 to 6/15; 1 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 1 of 3 years	no use 5/1 to 6/15; 1 of 3 years	NA	NA
Vegetation	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 7/15-9/30; 1 of 3 years	no use 7/15-9/30; 1 of 3 years	no use 7/15-9/30; 1 of 3 years	no use 7/15-9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Toy allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Toy allotment at approximately 10 acres per AUM¹¹⁹ (Appendix C). This stocking rate is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and current livestock grazing management practices that are significant factors in not meeting Standards 1, 2, 3, 4, and 8.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 264 AUMs as outlined in Table ALT-215. Authorized active use in the Toy allotment would be reduced from 940 AUMs in the existing permit to 264 AUMs. The elimination of 676 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Based on private land ownership and state land lease information provided in the application received on June 13, 2013, available forage production would be defined based on percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands which they may control by the permittee¹²⁰.

Table ALT-215: Permitted grazing use within the Toy allotment with implementation of Alternative 3

Active Use	Suspension ¹²¹	Permitted Use
264 AUMs	313 AUMs	577 AUMs

The grazing schedule for the Toy allotment, identified in Table ALT-216, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

¹¹⁹ If BLM were to implement actions to maximize livestock use of forage production, approximately 3.9 acres would be required to support 1 AUM in the Toy allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Toy allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Toy allotment: 45 percent early seral and 55 percent mid seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 3.9 acres per AUM if the ideal conditions were present in the Toy allotment, the current permit is based on an allotment-wide stocking rate of 3.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Toy allotment.

¹²⁰ Percent public land for the Toy allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions.

¹²¹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,253 AUMs to 577 AUMs would not result in an increase in suspension AUMs.

Table ALT-216: Toy allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	5/1 to 6/30	10/1 to 11/15	10/1 to 11/15
2	5/1 to 6/30	10/1 to 11/15	10/1 to 11/15
3	10/1 to 11/15 (limited water)	5/1 to 6/30 *	5/1 to 6/30 *
4	10/1 to 11/15	5/1 to 6/30 *	5/1 to 6/30 *

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Toy allotment would be defined as listed in Table ALT-217 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-217: Mandatory and other terms and conditions of the offered permit to graze livestock within the Toy allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00533	121	Cattle	5/1	6/30	62*	Active	264
Toy	121	Cattle	10/1	11/15	62*	Active	

The following grazing permit terms and conditions specific to the Toy allotment would be included in the permit offered:

1. Grazing use of the Toy allotment (0533) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Toy allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4 inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0533 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.

8. Utilization may not exceed 50 percent of the current year's growth.

2.4.18.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Toy allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-218). High-value resources present in the Toy allotment, as defined in Section 2.2.4, include sage-grouse pre-laying/lekking habitats in pastures 1 through 3 and sage-grouse late brood-rearing/summer habitats in pasture 1.

Table ALT-218: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Toy allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	NA	NA
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	NA	NA
Sage-grouse (late brood-rearing/summer)	no use 7/1 to 8/30; 2 of 3 years	NA	NA	NA
Redband Trout (spawning)	NA	NA	NA	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	NA	no use 5/1 to 6/15; 2 of 3 years
Vegetation	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years	no use 3/1 to 5/31; 2 of 3 years
Riparian/ Water Quality	no use 7/15-9/30; 2 of 3 years	no use 7/15-9/30; 2 of 3 years	no use 7/15-9/30; 2 of 3 years	no use 7/15-9/30; 2 of 3 years

BLM would establish a grazing schedule under Alternative 4 for the Toy allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Toy allotment at approximately 10 acres per AUM¹²² (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment, as limited by inventoried condition, water availability, topography, and current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 170 AUMs, as outlined in Table ALT-219. Authorized active use in the Toy allotment would be reduced from 940 AUMs in the existing permit to 170 AUMs. The elimination of 770 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Based on private land ownership and state land lease information provided in the application received on June 13, 2013, available forage production would be defined based on percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands which they may control by the permittee¹²³.

Table ALT-219: Permitted grazing use within the Toy allotment with implementation of Alternative 4

Active Use	Suspension ¹²⁴	Permitted Use
170 AUMs	313 AUMs	483 AUMs

The grazing schedule for the Toy allotment, identified in Table ALT-220, would be authorized and its implementation would be included as a term and condition of the permit offered.

Table ALT-220: Toy allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	5/1 to 6/30	10/1 to 11/15	10/1 to 11/15
2	10/1 to 11/15	5/1 to 6/30	10/1 to 11/15
3	10/1 to 11/15 (limited water)	5/1 to 6/30	10/1 to 11/15
4	10/1 to 11/15	10/1 to 11/15	5/1 to 6/30

¹²² If BLM were to implement actions to maximize livestock use of forage production, approximately 3.9 acres would be required to support 1 AUM in the Toy allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Toy allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Toy allotment: 45 percent early seral and 55 percent mid-seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 3.9 acres per AUM if the ideal conditions were present in the Toy allotment, the current permit is based on an allotment-wide stocking rate of 3.8 acres per AUM on public land. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, and 8 in the Toy allotment.

¹²³ Percent public land for the Toy allotment was calculated based on the normal year potential production of ecological sites for the proportion of public lands in the allotment, compared to the total of public lands plus lands which may be controlled by the permittee. Although the ecological condition of lands within the allotment may not be in reference condition, the assumption was made that both public lands and lands controlled by the permittee are in equal condition and the proportion of production from each does not differ from the proportion of production at reference site conditions.

¹²⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 1,253 AUMs to 483 AUMs would not result in an increase in suspension AUMs.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Toy allotment would be defined as listed in Table ALT-221 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-221: Mandatory and other terms and conditions of the offered permit to graze livestock within the Toy allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00533	78	Cattle	5/1	6/30	62*	Active	170
Toy	78	Cattle	10/1	11/15	62*	Active	

The following grazing permit terms and conditions specific to the Toy allotment would be included in the permit offered:

1. Grazing use of the Toy allotment (0533) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Toy allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. Minimum 4 inch stubble will be left on herbaceous vegetation within the riparian area along 1.5 miles of Meadow Creek in allotment #0533 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth

2.4.18.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Toy allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 1,253 AUMs of permitted use in the Toy allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.19 West Castle Allotment

Standards 1(Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the Idaho Standards for Rangeland Health are not being met in the West Castle Allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7, whereas current livestock management practices are not significant factors toward not meeting Standards 1, 4, and 8. Livestock management practices do not conform to the applicable Livestock Grazing Management Guidelines 5, 7, and 10 for several Standards (see Appendix A).

2.4.19.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the West Castle allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 7-year period between 2005 and 2011 has averaged 169 AUMs, with a maximum of 454 AUMs in 2011 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Scott and Sherri Nicholson would be authorized to graze cattle in the allotment from October 1 through February 28, with an authorized active use of 454 AUMs. Authorized active use in the West Castle allotment would be reduced from 700 AUMs in the existing permits to 454 AUMs. The elimination of 246 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the West Castle allotment under Alternative 1 is summarized in Table ALT-222.

Table ALT-222: Permitted grazing use within the West Castle allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ¹²⁵	Permitted Use
454 AUMs	161 AUMs	615 AUMs

Livestock grazing use in the one pasture of the West Castle allotment would be implemented with the grazing schedule limited by the permit and actual use reported between 2005 and 2011. Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is between October 15 and December 31.

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-224 and the following numbered items.

Table ALT-223: Mandatory and other terms and conditions of the offered permit to graze livestock within the West Castle allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00648 West Castle	177	Cattle	10/15	12/31	100	Active	454

¹²⁵ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 861 AUMs to 615 AUMs would not result in an increase in suspension AUMs.

Terms and conditions:

1. Turnout is subject to the Boise District range readiness criteria.
2. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
3. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
4. Changes to the scheduled use require prior approval.
5. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
6. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
7. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
8. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
9. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
10. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
11. Utilization may not exceed 50 percent of the current year's growth.
12. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.19.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the West Castle allotment in accordance with terms and conditions within the application received June 13, 2013, from Scott Nicholson. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Scott and Sherri Nicholson would be offered a grazing permit for a term of 10 years with an active use of 700 AUMs, as outlined in Table ALT-224; the application received that did not request change from the current permit.

Table ALT-224: Permitted grazing use within the West Castle allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Active Use	Suspension	Permitted Use
700 AUMs	161 AUMs	861 AUMs

In accordance with the June 13, 2013, application, the grazing schedule for the one pasture of the West Castle allotment between October 1 and February 28 would be maintained and authorized.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-225 and the following numbered items.

Table ALT-225: Mandatory and other terms and conditions of the offered permit to graze livestock within the West Castle allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00648 West Castle	141	Cattle	10/1	2/28	100	Active	700

Terms and conditions:

1. Turnout is subject to the Boise District range readiness criteria.
2. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
3. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
4. Changes to the scheduled use require prior approval.
5. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
6. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
7. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
8. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
9. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
10. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
11. Utilization may not exceed 50 percent of the current year’s growth.

2.4.19.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the West Castle allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present. While the current season of use authorized (10/1 to 2/28 annually) meets the constraints for development of Alternative 3 identified in Section 2.2.3, the unique salt desert shrub setting of the West Castle allotment, resulting from its low elevation and limited effective precipitation, increases the potential for physical impacts should winter conditions be wetter without freezing soils. As a result and consistent with actual use reported in recent

years , an allotment-specific constraint for soils was expanded to allow no grazing use between January 1 and May 15 (see Table ALT-226).

Table ALT-226: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the West Castle allotment under Alternative 3

Resource	Pasture 1 Use
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years*
Soils	no use 1/1 to 5/15
Riparian/ Water Quality	no use 6/15-9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the West Castle allotment that implements the above constraints. Once that schedule is established, BLM would retain the stocking rate for the West Castle allotment at 21.5 acres per AUM¹²⁶ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment that indicates that 10.9 acres would be necessary to support one AUM under ideal conditions. Additionally, available production is limited by inventoried condition, water availability, and topography. The current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7, but historic grazing practices are the cause for the allotment failing to meet Standards 1, 4, and 8.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 454 AUMs, as outlined in Table ALT-228. Authorized active use in the West Castle allotment would be reduced from 700 AUMs in the existing permit to 454 AUMs. The elimination of 246 AUMs of active use would not result in a conversion to suspension AUMs, as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-227: Permitted grazing use within the West Castle allotment with implementation of Alternative 3

Active Use	Suspension¹²⁷	Permitted Use
454 AUMs	161 AUMs	615 AUMs

¹²⁶ If BLM were to implement actions to maximize livestock use of forage production, approximately 10.9 acres would be required to support 1 AUM in the West Castle allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the West Castle allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: West Castle allotment: 100 percent early seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the one pasture. Appropriate seasons of grazing use limit the availability of forage. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 10.9 acres per AUM if the ideal conditions were present in the West Castle allotment, the current permit is based on an allotment-wide stocking rate of 13.9 acres per AUM on public land with full use of active authorized use, but 21.5 acres per AUM on public land at the maximum recent actual use reported. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7 in the West Castle allotment.

¹²⁷ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 861 AUMs to 615 AUMs would not result in an increase in suspension AUMs.

The existing grazing schedule for the West Castle allotment, with late fall and winter use planned, is consistent with the above constraints and would be continued.

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the West Castle allotment would be defined as listed in Table ALT-228 and the bullets listing allotment-specific, as well as applicable Boise District terms and conditions that follow.

Table ALT-228: Mandatory and other terms and conditions of the offered permit to graze livestock within the West Castle allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00648 West Castle	150	Cattle	10/1	12/31	100	Active	454

The following grazing permit terms and conditions specific to the West Castle allotment would be included in the permit offered:

1. Grazing use of the West Castle allotment (0648) will be in accordance with the grazing identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the West Castle allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

As developed, Alternative 3 differs from Alternative 1 only in the on-date, which is two weeks later (October 1 under Alternative 3, compared to October 15 under Alternative 1). This difference remains outside the dates of constraints identified for all resources under Alternative 3. Although the slightly shorter period of use authorized under Alternative 3 results in a slight difference in the number of cattle authorized to graze, while retaining the same number of active use AUMs, Alternative 3 is not analyzed further in this EA because it does not differ from Alternative 1 substantively.

2.4.19.4 Alternative 4

Under Alternative 4, BLM would renew the livestock grazing permit for use in the West Castle allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a

degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives when identified resources are present. While the current season of use authorized (10/1 to 2/28 annually) meets the constraints for development of Alternative 3 identified in Section 2.2.3, the unique salt desert shrub setting of the West Castle allotment, resulting from its low elevation and limited effective precipitation, increases the potential for physical impacts should winter conditions be wetter without freezing soils. As a result and consistent with actual use reported in recent years, an allotment-specific constraint for soils was expanded to allow no grazing use between January 1 and May 15. In addition, Alternative 4 would implement actions to protect and enhance high-value resources (see Table ALT-229). High-value resources present in the West Castle allotment, as defined in Section 2.2.4, are limited to sage-grouse pre-laying/lekking habitats.

Table ALT-229: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the West Castle allotment under Alternative 4

Resource	Pasture 1 Use
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years
Vegetation	no use 5/1 to 6/30; 2 of 3 years
Soils	no use 1/1 to 5/15
Riparian/ Water Quality	no use 6/15-9/30; 2 of 3 years

BLM would establish a grazing schedule under Alternative 4 for the West Castle allotment that implements the above constraints. Once that schedule is established, BLM would retain the stocking rate for the West Castle allotment at approximately 30 acres per AUM¹²⁸ (Appendix C). This is a very conservative stocking rate that may be appropriate, considering the ecological site potential within the allotment, as limited by inventoried condition, water availability, and topography. Although the current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7, Standards 1, 4, and 8 are not met due to historic grazing practices.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 326 AUMs as outlined in Table ALT-230. Authorized active use in the West Castle allotment would be reduced from 700 AUMs in the existing permit to 326 AUMs. The elimination of 374 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

¹²⁸ If BLM were to implement actions to maximize livestock use of forage production, approximately 10.9 acres would be required to support 1 AUM in the West Castle allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the West Castle allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: West Castle allotment: 100 percent early seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of the one pasture. Appropriate seasons of grazing use limit the availability of forage. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 10.9 acres per AUM if the ideal conditions were present in the West Castle allotment, the current permit is based on an allotment-wide stocking rate of 13.9 acres per AUM on public land with full use of active authorized use, but 21.5 acres per AUM on public land at the maximum recent actual use reported. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7 in the West Castle allotment.

Table ALT-230: Permitted grazing use within the West Castle allotment with implementation of Alternative 4

Active Use	Suspension ¹²⁹	Permitted Use
326	161 AUMs	487

The grazing schedule that has recently been implemented within the West Castle allotment, with late autumn and early winter use, is more conservative than the existing permit schedule and is consistent with the above constraints. Grazing use would be authorized within the West Castle allotment between October 15 and December 31 annually.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the West Castle allotment would be defined as listed in Table ALT-231 and the bullets listing allotment-specific and applicable Boise District terms and conditions that follow.

Table ALT-231: Mandatory and other terms and conditions of the offered permit to graze livestock within the West Castle allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00648 West Castle	127	Cattle	10/15	12/31	100	Active	326

The following grazing permit terms and conditions specific to the West Castle allotment would be included in the permit offered:

1. Grazing use of the West Castle allotment (0648) will be in accordance with the grazing identified in the final decision of the Owyhee Field Office Manager dated _____. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the West Castle allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.
6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

¹²⁹ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 861 AUMs to 487 AUMs would not result in an increase in suspension AUMs.

2.4.19.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the West Castle allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 861 AUMs of permitted use in the West Castle allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

2.4.20 Whitehorse/Antelope Allotment

Standards 1 (Watersheds), 2 (Riparian Areas and Wetlands), 3 (Stream Channel/Floodplain), 4 (Native Plant Communities), 7 (Water Quality), and 8 (Threatened and Endangered Plants and Animals) of the applicable Standards for Rangeland Health are not being met in the Whitehorse/Antelope allotment. Standards 5 (Seedings) and 6 (Exotic Plant Communities, other than Seedings) are not applicable to this allotment. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, 7 and 8. Livestock management practices do not conform with the applicable Livestock Grazing Management Guidelines 1, 3, 4, 5, 6, 7, 8, 9, 10 and 12 for several Standards (see Appendix A).

2.4.20.1 Alternative 1

Under Alternative 1, the BLM would renew the livestock grazing permit for use in the Whitehorse/Antelope allotment with the same terms and conditions as those in the existing permit, except for authorized livestock numbers and AUMs of active use. Actual use reported during the 8-year period between 2005 and 2012 has averaged 1,413 AUMs, with a maximum of 1,807 AUMs in 2011 (Appendix B). Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently, a level of use that has resulted in current resource conditions on public land within the allotment. As a result, Scott and Sherri Nicholson would be authorized to graze cattle in the allotment from April 15 through October 31, with an authorized active use of 1,807 AUMs. Authorized active use in the Whitehorse/Antelope allotment would be reduced from 4,345 AUMs in the existing permits to 1,807 AUMs. The elimination of 2,538 AUMs of active use would not result in a conversion to suspension, as discussed in Section 2.1.2. Permitted use in the Whitehorse/Antelope allotment under Alternative 1 is summarized in Table ALT-232.

Table ALT-232: Permitted grazing use within the Whitehorse/Antelope allotment with implementation of Alternative 1 – Current Situation

Active Use	Suspension ¹³⁰	Permitted Use
1,807 AUMs	1,460 AUMs	3,267 AUMs

Livestock grazing use in the Whitehorse/Antelope allotment would be implemented with the grazing schedule limited by the permit and consistent with actual use reported between 2005 and 2012. Appendix B includes a summary of actual use reported by the permittee in recent years. The typical grazing schedule is displayed in Table ALT-233.

¹³⁰ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph “c” with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 5,805 AUMs to 3,267 AUMs would not result in an increase in suspension AUMs.

Table ALT-233: Typical grazing schedules for the Whitehorse/Antelope allotment derived from recent reported actual use

Pasture	Approximate Dates
1	4/15 to 5/31
2	6/1 to 6/20
3	6/21 to 7/10
4	10/1 to 10/31
5	9/21/ to 9/30
6	7/11 to 9/20
7	No actual use reported in recent years (Flexible dates)

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

In addition to terms and conditions of the existing permit, terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would be included in terms and conditions of the offered permit. Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-234 and the following numbered items.

Table ALT-234: Mandatory and other terms and conditions of the offered permit to graze livestock within the Whitehorse/Antelope allotment with implementation of Alternative 1 – Current Situation

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00541 Whitehorse/Antelope	298	Cattle	4/15	10/31	92*	Active	1,807

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 4.5 miles of the North Fork of Castle Creek in allotment #0541 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.

10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year's growth.
13. United States District Court for the District of Idaho imposed terms and conditions
 - Key herbaceous riparian vegetation, where stream bank stability is dependent upon it, will have a minimum stubble height of 4 inches on the stream bank, along the greenline, after the growing season;
 - Key riparian browse vegetation will not be used more than 50 percent of the current annual twig growth that is within reach of the animals;
 - Key herbaceous riparian vegetation on riparian areas, other than the stream banks, will not be grazed more than 50 percent during the growing season, or 60 percent during the dormant season; and
 - Stream bank damage attributable to grazing livestock will be less than 10 percent on a stream segment.

2.4.20.2 Alternative 2

Under Alternative 2, BLM would renew the livestock grazing permit for use in the Whitehorse/Antelope allotment in accordance with terms and conditions within the application received June 13, 2013, from Scott Nicholson. Terms and conditions for stubble height, woody browse, utilization, and stream bank alteration imposed on the grazing permit by the United States District Court for the District of Idaho would not be included in terms and conditions of the offered permits. The complete application is reproduced in Appendix D.

Scott and Sherri Nicholson would be offered a grazing permit for a term of 10 years with an active use of 4,345 AUMs as outlined in Table ALT-235; the application received did not request change from the current permit.

Table ALT-235: Permitted grazing use within the Whitehorse/Antelope allotment with implementation of Alternative 2 – Applicant's Proposed Action

Active Use	Suspension	Permitted Use
4,345 AUMs	1,460 AUMs	5,805 AUMs

In accordance with the June 13, 2013, application and recent actual use reported, the grazing schedule for the Whitehorse/Antelope allotment displayed in Table ALT-236 would be maintained and authorized.

Table ALT-236: Typical grazing schedules for the Whitehorse/Antelope allotment derived from recent reported actual use

Pasture	Approximate Dates
1	3/1 to 5/31
2	6/1 to 6/20
3	6/21 to 7/10
4	10/1 to 10/20
5	9/21/ to 9/30

Pasture	Approximate Dates
6	7/11 to 9/20
7	10/21 to 10/31

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

Mandatory and other terms and conditions of the offered permit would be defined as listed in Table ALT-237 and the following numbered items.

Table ALT-237: Mandatory and other terms and conditions of the offered permit to graze livestock within the Whitehorse/Antelope allotment with implementation of Alternative 2 – Applicant’s Proposed Action

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00541 Whitehorse/Antelope	568	Cattle	3/1	10/31	92*	Active	4,345

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

Terms and conditions:

1. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 4.5 miles of the North Fork of Castle Creek in allotment #0541 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.
2. Turnout is subject to the Boise District range readiness criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, and water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock enclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signatory or assignee. All maintenance of range improvements within wilderness study areas requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, land offered for exchange-of-use, and livestock control agreements must be approved prior to turnout. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District policy.
10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1(B)(1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing will be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates will require prior authorization.
12. Utilization may not exceed 50 percent of the current year’s growth.

2.4.20.3 Alternative 3

Under Alternative 3, BLM would renew the livestock grazing permit for use in the Whitehorse/Antelope allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing

use to a degree necessary to meet, make significant progress toward meeting, or continue meeting all standards and the ORMP objectives within pastures where identified resources are present (see Table ALT-238).

Table ALT-238: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Whitehorse/Antelope allotment under Alternative 3

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6	Pasture 7
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years	no use 4/1 to 6/30; 1 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years	NA	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years	no use 3/15 to 6/15; 1 of 3 years
Spotted Frog (breeding)	NA	NA	NA	NA	NA	no use 5/1 to 6/15; 1 of 3 years	NA
Vegetation	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 6/30; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*	no use 5/1 to 7/15; 2 of 3 years*
Soils	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/15; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years	no use 3/1 to 5/31; 1 of 3 years
Riparian/ Water Quality	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years	no use 6/15-9/30; 1 of 3 years

* Flexibility to graze more frequently between 5/1 and 6/30 with utilization limits (see Section 2.2.3)

BLM would establish a grazing schedule under Alternative 3 for the Whitehorse/Antelope allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Whitehorse/Antelope allotment at approximately 25 acres per AUM¹³¹ (Appendix C). This is a conservative stocking rate consistent with ecological site potential within the allotment that indicates that 6.0 acres would be necessary to support one AUM under ideal conditions. Additionally, available production is limited by inventoried condition, water availability, and topography. In addition, current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, 7, and 8, with a stocking rate of 21.0 acres per AUM under the maximum actual use that has been reported in recent years.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 1,520 AUMs as outlined in Table ALT-239. Authorized active use in the Whitehorse/Antelope allotment would be reduced from 4,345 AUMs in the existing permit to 1,520 AUMs. The elimination of 2,825 AUMs of active use would not result in a conversion to suspension AUMs as discussed in Section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment.

Table ALT-239: Permitted grazing use within the Whitehorse/Antelope allotment with implementation of Alternative 3

Active Use	Suspension ¹³²	Permitted Use
1,520 AUMs	1,460 AUMs	2,980 AUMs

The grazing schedule for the Whitehorse/Antelope allotment, identified in Table ALT-240, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use consistent with constraints listed above.

Table ALT-240: Whitehorse/Antelope allotment grazing strategy with implementation of Alternative 3

Pasture	Year 1	Year 2	Year 3
1	3/1 to 4/30	3/1 to 4/30	10/1 to 10/31
2	5/1 to 6/30	10/1 to 10/31	3/1 to 4/30
3	10/1 to 10/31	5/1 to 6/30 *	5/1 to 6/30 *
4	8/1 to 8/31	Rest	9/1 to 9/30

¹³¹ If BLM were to implement actions to maximize livestock use of forage production, approximately 6.0 acres would be required to support 1 AUM in the Whitehorse/Antelope allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Whitehorse/Antelope allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Whitehorse/Antelope allotment: 40 percent early seral, 50 percent mid-seral, and 10 percent late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 6.0 acres per AUM if the ideal conditions were present in the Whitehorse/Antelope allotment, the current permit is based on an allotment-wide stocking rate of 8.7 acres per AUM on public land. In addition, these stocking rates compare to the recent maximum actual use reported at 21.0 acres per AUM. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, 7, and 8 in the Whitehorse/Antelope allotment.

¹³² In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 5,805 AUMs to 2,980 AUMs would not result in an increase in suspension AUMs.

Pasture	Year 1	Year 2	Year 3
5	9/1 to 9/30	9/1 to 9/30	Rest
6	Rest	7/1 to 8/31	7/1 to 8/31
7	7/1 to 7/31	10/1 to 10/31	10/1 to 10/31

* Upland utilization limit not to exceed 20 percent at the end of the active growing season (7/15)

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

As a result of the above Alternative 3 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Whitehorse/Antelope allotment would be defined as listed in Table ALT-241 and the bullets listing allotment-specific, as well as applicable Boise District, terms and conditions that follow.

Table ALT-241: Mandatory and other terms and conditions of the offered permit to graze livestock within the Whitehorse/Antelope allotment with implementation of Alternative 3

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00541 Whitehorse/Antelope	205	Cattle	3/1	10/31	92*	Active	1,520

* Application of percent public land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Whitehorse/Antelope allotment would be included in the permit offered:

1. Grazing use of the Whitehorse/Antelope allotment (0541) will be in accordance with the grazing schedule and limits to the intensity of use identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, as long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Whitehorse/Antelope allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum 4-inch stubble will be left on herbaceous vegetation within the riparian area along 4.5 miles of the North Fork of Castle Creek in allotment #0541 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment-specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock exclosures located within the grazing allotment are closed to all domestic grazing use.

6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.20.4 Alternative 4

Constraints, in addition to those identified under Alternative 4, Section 2.2.4 of this EA, are required to meet all standards for land health in the Whitehorse/Antelope allotment. Current livestock management practices, that include annual grazing use of pasture 1 between April 15 and April 31, have contributed toward not meeting Standard 1(Watersheds) and indirectly result in effects that limit meeting Standards 4 and 8. Standard 1 was also not met in pastures 2, 3, 5, and 6 due to current livestock management practices. Pastures 1, 2, and 3 are lower elevation pastures (pasture 1 between 2,846 and 4,006 feet; pasture 2 between 3,379 and 4,520 feet; pasture 3 between 3,676 and 6,365 feet) and conducive for turnout of livestock at the beginning of the grazing season. Implementation of a 3-year rotation, requiring turnout of livestock in one of these three pastures, would result in the distribution of early spring livestock to each of the three pastures in one year of the rotation, increasing impacts to soils in pastures 2 and 3, while only minimally reducing those impacts in pasture 1. As a result, an additional constraint under Alternative 4 would be implemented for the Whitehorse/Antelope allotment to further limit livestock grazing in the allotment between March 1 and May 15 and not allow livestock turnout in the allotment until May 16 to meet Standard 1.

Under Alternative 4, BLM would renew the livestock grazing permit for use in the Whitehorse/Antelope allotment with terms and conditions that constrain seasons, intensities, duration, and frequency of grazing use to a degree necessary to meet, make significant progress toward meeting, or maintain meeting all standards and the ORMP objectives when identified resources are present. In addition, Alternative 4 would implement actions to protect and enhance high value resources (see Table ALT-242). High value resources present in the Whitehorse/Antelope allotment, as defined in Section 2.2.4, include sage grouse pre-laying/lekking habitats in pastures 1 through 7 and 1 mile or more of perennial streams in pastures 1, 2, 3, and 5.

Table ALT-242: Constraints to seasons, intensities, duration, and frequency of grazing use specific to the Whitehorse/Antelope allotment under Alternative 4

Resource	Pasture 1	Pasture 2	Pasture 3	Pasture 4	Pasture 5	Pasture 6	Pasture 7
Sage-grouse (pre-laying/lekking)	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years	no use 3/1 to 3/31; 2 of 3 years
Sage-grouse (nesting/early brood-rearing)	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years	no use 4/1 to 6/30; 2 of 3 years
Redband Trout (spawning)	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years	NA	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years	no use 3/15 to 6/15; 2 of 3 years
Spotted Frog (breeding)	NA	NA	NA	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	no use 5/1 to 6/15; 2 of 3 years	NA
Vegetation	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 6/30; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years	no use 5/1 to 7/15; 2 of 3 years
Soils	no use 3/1 to 5/15; all years	no use 3/1 to 5/15; all years	no use 3/1 to 5/31; all years	no use 3/1 to 5/31; all years	no use 3/1 to 5/31; all years	no use 3/1 to 5/31; all years	no use 3/1 to 5/31; all years
Riparian/ Water Quality	no use 6/15-9/30; all years*	no use 6/15-9/30; all years*	no use 6/15-9/30; all years*	no use 6/15-9/30; 2 of 3 years	no use 6/15-9/30; all years*	no use 6/15-9/30; 2 of 3 years	no use 6/15-9/30; 2 of 3 years

* Pasture contains high value riparian/ fish habitat

BLM would establish a grazing schedule under Alternative 4 for the Whitehorse/Antelope allotment that implements the above constraints. Once that schedule is established, BLM would set the stocking rate for the Whitehorse/Antelope allotment to not stock any pastures that would result in less than 21 acres per AUM and not less than 27 acres per AUM in the lower elevation pastures 1, 2, or 3¹³³ (Appendix C). Twenty one per AUM stocking rate is a conservative stocking rate that may be appropriate when one considers the ecological site potential within the allotment that indicates that 6.0 acres would be necessary to support one AUM under ideal conditions. Additionally, available production is limited by inventoried condition, water availability, and topography. Finally, current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, 7, and 8 with a stocking rate of 21.0 acres per AUM allotment-wide under the maximum actual use that has been reported in recent years.

Scott and Sherri Nicholson would be offered a permit for a term of 10 years with an active use of 795 AUMs as outlined in Table ALT-243. Authorized active use in the Whitehorse/Antelope allotment would be reduced from 4,345 AUMs in the existing permit to 795 AUMs. The elimination of 3,550 AUMs of active use would not result in a conversion to suspension AUMs as discussed in section 2.1.2. The difference in AUMs would be the result of fewer livestock numbers, in addition to authorizing spring turnout of livestock approximately 10 weeks later than the current permit or 4 weeks later than under the current situation (Alternative 1).

Table ALT-243: Permitted grazing use within the Whitehorse/Antelope allotment with implementation of Alternative 4

Active Use	Suspension ¹³⁴	Permitted Use
795 AUMs	1,460 AUMs	2,255 AUMs

The grazing schedule for the Whitehorse/Antelope allotment, identified in Table ALT-244, would be authorized and its implementation would be included as a term and condition of the permit offered. Flexibility in dates of moves between pastures would be provided to meet resource management and livestock management objectives, so long as move dates adhere to seasons of use constraints identified above.

Table ALT-244: Whitehorse/Antelope allotment grazing strategy with implementation of Alternative 4

Pasture	Year 1	Year 2	Year 3
1	Rest	5/16 to 6/30	10/16 to 10/31
2	10/16 to 10/31	Rest	5/16 to 6/30
3	5/16 to 7/31	7/16 to 9/30	Rest

¹³³ If BLM were to implement actions to maximize livestock use of forage production, approximately 6.0 acres would be required to support 1 AUM in the Whitehorse/Antelope allotment in a normal year, assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at 50 percent of grass and grass-like species. These ideal conditions are not present within the Whitehorse/Antelope allotment. Vegetation inventories identify most sites within the allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEGE-2: Whitehorse/Antelope Allotment: 40% early seral, 50% mid seral, and 10% late seral). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow an even 50 percent utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production. When compared to a potential stocking rate of 6.0 acres per AUM if the ideal conditions were present in the Whitehorse/Antelope allotment, the current permit is based on an allotment-wide stocking rate of 8.7 acres per AUM on public land. In addition, these stocking rates compare to the recent maximum actual use reported at 21.0 acres per AUM. Current livestock grazing management practices are significant factors in not meeting Standards 1, 2, 3, 4, 7, and 8 in the Whitehorse/Antelope allotment.

¹³⁴ In accordance with revisions to the grazing regulations as amended through February 6, 1996, paragraph "c" with provisions requiring the authorized officer to hold AUMs comprising the decreased permitted use in suspension was removed from 43 CFR 4110.3-2. As a result, the reduction in permitted use from 5,805 AUMs to 2,255 AUMs would not result in an increase in suspension AUMs.

Pasture	Year 1	Year 2	Year 3
4	8/1 to 9/9	10/1 to 10/31	Rest
5	9/10 to 9/30	Rest	Rest
6	Rest	Rest	7/1 to 9/30
7	10/1 to 10/15	7/1 to 7/15	10/1 to 10/15

The percent public land, calculated by the proportion of livestock forage available on public lands within the allotment, compared to the total available from both public land and lands controlled by the permittee, would be unchanged from the existing permit.

As a result of the above Alternative 4 actions, mandatory and other terms and conditions of the offered permit for grazing use in the Whitehorse/Antelope allotment would be defined as listed in Table ALT-245 and the bullets listing allotment specific and applicable Boise District terms and conditions that follow.

Table ALT-245: Mandatory and other terms and conditions of the offered permit to graze livestock within the Whitehorse/Antelope allotment with implementation of Alternative 4

Allotment	Livestock		Grazing Period		% PL	Type Use	AUMs
	Number	Kind	Begin	End			
00541 Whitehorse/Antelope	155	Cattle	5/16	10/31	92*	Active	795

* Application of percent-public-land to the offered permit is subject to submission of documentation of state and/or private land in the allotment controlled by the permittee.

The following grazing permit terms and conditions specific to the Whitehorse/Antelope allotment would be included in the permit offered:

1. Grazing use of the Whitehorse/Antelope allotment (0541) will be in accordance with the grazing schedule identified in the final decision of the Owyhee Field Office Manager dated _____. Flexibility in dates of moves between pastures is provided to meet resource management and livestock management objectives, so long as move dates adhere to seasons of use constraints identified in the decision. Changes to the scheduled use require approval by the authorized officer, consistent with Standard Terms and Conditions.
2. A crossing permit for trailing of livestock associated with the grazing authorization in the Whitehorse/Antelope allotment for the term of this grazing permit, and consistent with the final decision of the authorized officer dated _____, is authorized concurrent with this grazing permit.
3. A minimum 4 inch stubble will be left on herbaceous vegetation within the riparian area along 4.5 miles of the North Fork of Castle Creek in allotment #0541 at the end of the growing season, as identified in the fisheries objective of the Owyhee RMP.

The following applicable Boise District grazing permit terms and conditions would be included in the permit offered:

1. Turn-out is subject to the Boise District range readiness criteria.
2. The permittee's certified actual use report is due within 15 days of completing the authorized annual grazing use.
3. Salt and/or supplements shall not be placed within one-quarter (1/4)-mile of springs, streams, meadows, aspen stands, playas, special status plant populations or water developments.
4. Trailing activities, other than the allotment specific crossing authorization identified above, must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
5. Livestock enclosures located within the grazing allotment are closed to all domestic grazing use.

6. Range improvements must be maintained in accordance with the cooperative agreement and range improvement permit in which you are a signatory or assignee. All maintenance of range improvements within designated Wilderness requires prior consultation with the authorized officer.
7. All appropriate documentation regarding base property leases, lands offered for exchange-of-use, and livestock control agreements must be approved prior to turn out. Leases of land and/or livestock must be notarized prior to submission and be in compliance with Boise District Policy.
8. Utilization may not exceed 50 percent of the current year's growth.

2.4.20.5 Alternative 5

Under Alternative 5, no grazing would be authorized on public lands within the Whitehorse/Antelope allotment for a term of 10 years. The application for grazing permit renewal would be denied and no grazing permit would be offered. All 5,805 AUMs of permitted use in the Whitehorse/Antelope allotment would be cancelled and unavailable for livestock grazing on public lands. Upon expiration of the 10-year term, livestock grazing on the allotment would be reevaluated, with retention of preference (priority for grazing authorization) for approval of application(s) for grazing permit(s) attached to the current base property.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Affected Environment Common to All Allotments

3.1.1 Vegetation, incl. Noxious Weeds

Vegetation Inventory – Ecological Sites

The ecological site inventory has been the Bureau of Land Management standard vegetation inventory since 1982. An ecological site is a land structure type with physical characteristics that sets it apart from other sites in its ability to produce a distinctive kind and amount of vegetation. It is the product of all the environmental factors responsible for its development, and it has a set of key characteristics (soils, hydrology, and vegetation) that are included in the ecological site description. Ecological sites are correlated with and can generally be determined directly from a soils map.

The vegetation types and ecological sites for public lands within the portion of the Owyhee Field Office that includes the Toy Mountain Group allotments were described in a vegetation inventory and analysis using methodologies described in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). Vegetation inventories for public lands in Owyhee County were correlated to soil surveys and reported in the Soil Survey of Owyhee County, Idaho¹³⁵ (USDA NRCS, 2003).

The potential natural vegetation communities for ecological sites represented in the Toy Mountain Group allotments are primarily dominated by sagebrush and bunchgrass in a range of site descriptions, with soil depths from very shallow to moderately deep and textures from loamy to clay. Some sites have significant surface stones. Potential vegetation communities developed with an effective average annual precipitation range of 7 inches to more than 16 inches (USDA NRCS, 2010). At higher elevations, both mountain shrub-dominated communities described in the Mahogany Savanna ecological site description and communities dominated by conifers described in the Douglas Fir Snowberry ecological site occur, with an average annual precipitation of 16 to 22 inches. Additionally, more xeric sites present at lower elevations

¹³⁵ Vegetation inventories for public lands in Owyhee Field Office were completed between 1977 and 1979 using the Soil Vegetation Inventory Method and Range Site Descriptions. These techniques were the precursor of the current Ecological Site Inventory methods.

in the Toy Mountain Group allotments are described in the Calcerous Loam, Saline Bottom, and Silty ecological site descriptions.

In addition, unmapped inclusions are present within the larger ecological sites. Examples of unmapped inclusions are stands of juniper or aspen, riparian areas, and areas with the surface features devoid of vegetation. Allotment-specific information for each of the Owyhee River Group allotments identifying ecological sites, dominant vegetation, and acreages are provided in the vegetation Affected Environment Sections of this EA.

Table VEG-1 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Toy Mountain Group allotments (Map ECOL-1a and 1b). Ecological site potential and succession, as well as an introduction to state-and-transition models, are provided in Appendix E.

Table VEG-1: Ecological sites mapped for public lands in the Toy Mountain Group allotments

Ecological Site	Dominant Species Expected	BLM Acres
¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	30,062
DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	1,534
DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	21
¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	4,448
¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	1,436
¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	1,536
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	20,206
¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	3,730
¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	9,302
LOAMY BOTTOM 12-16 ARTRT/LECI4	basin big sagebrush; basin wildrye	6
¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	5,245
¹ MOUNTAIN RIDGE 14-18 ARAR8/FEID	low sagebrush; Idaho fescue	1,434
SALINE BOTTOM 8-12 SAVE4/LECI4	black greasewood; basin wildrye	743
¹ SAND 8-12 ARTRT/ACHY	basin big sagebrush; Indian ricegrass	253
¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	5,684
¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	1,521
¹⁻² SHALLOW CLAYPAN 12-16	low sagebrush;	31,581

Ecological Site	Dominant Species Expected	BLM Acres
ARAR8/FEID	Idaho fescue-bluebunch wheatgrass	
SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	1,495
¹ SILTY 7-10 KRLA2/ACHY	winterfat; Indian ricegrass-bottlebrush squirreltail	374
¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	2,918
¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	3,524
¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	1,509
UNKNOWN/NO DATA		6,939
Group 3 total acres		135,499

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

Rangeland Health Assessments, Evaluations, and Determinations

Rangeland Health Assessments and Determinations (see separate documents) were completed for the Toy Mountain Group allotments in 2013. Table VEG-2 shows a summary of conclusions of the evaluations of meeting the Idaho Standards for Rangeland Health and determinations identifying the causal factor(s) when standards were not met, as well as the conformance with the Guidelines for Livestock Management for Standard 4 – Native Plant Communities. The supplemented documents and determinations provide more detailed information regarding vegetation condition in relationship to reference site conditions and meeting Standard 4 of the Idaho Standards for Rangeland Health, all of which is incorporated by reference in this NEPA document. In addition, Table VEG-2 identifies ORMP vegetation management objectives met within the Toy Mountain Group allotments.

Table VEG-2: Land health assessment Standard 4-6 and ORMP vegetation management objectives met within the Toy Mountain Group allotments¹³⁶

Allotment Name	Pasture Number	Standard 4 Native plant communities	Standard 5 Seedings	Standard 6 Exotic Plant Communities	ORMP Objective
Alder Creek FFR	1	SNM/CLM	NA	NA	Improve-Not met
Boone Peak	1	SM	NA	NA	Improve-Not met
Box T	1	SNM/CLM	NA	NA	Improve-Not met
	2		NA	NA	
	3		NA	NA	
	4		NA	NA	
Bridge Creek	1	SNM/OC	NA	NA	Improve-Meeting
Browns Creek	1	NA	MSP	NA	Improve-Meeting
	2	NA	MSP	NA	

¹³⁶ Details pertaining to meeting land health standards and ORMP vegetation are available in the 2013 determinations and in the 2013 supplemented initial allotment reviews, assessments, and evaluations.

Allotment Name	Pasture Number	Standard 4 Native plant communities	Standard 5 Seedings	Standard 6 Exotic Plant Communities	ORMP Objective
Garrett FFR	1	SM	NA	NA	Improve-No data
	2	SM	NA	NA	
	3	SM	NA	NA	
	4	SM	NA	NA	
	5	SM	NA	NA	
	6	SM	NA	NA	
Hart Creek	1	SNM/OC	NA	NA	Improve-Not met
	2	SNM/OC	NA	NA	
	3	SM	NA	NA	
Josephine FFR	1	SNM/OC	NA	NA	Improve-No data
Lone Tree	1	SNM/OC	NA	NA	Improve-Not met
	2	SNM/OC	NA	NA	
	3	SNM/OC	NA	NA	
	4	SNM/OC	NA	NA	
	5	SNM/OC	NA	NA	
	6	SNM/OC	NA	NA	
Louisa Creek	1	SM	NA	NA	Improve-Met in pastures 1 and 2; not met in pastures 3, 4, and 5
	2	SM	NA	NA	
	3	SNM/OC	NA	NA	
	4	SNM/OC	NA	NA	
	5	SNM/OC	NA	NA	
Meadow Creek FFR	1	MSP	NA	NA	Improve-No data
Moore FFR	1	SNM/OC	NA	NA	Improve-No data
Munro FFR	1	SM	NA	NA	Improve-No data
Quicksilver FFR	1	SM	NA	NA	Improve- No data
	2	SM	NA	NA	
	3	SM	NA	NA	
Red Mountain	1	MSP	NA	NA	Improve-met in pastures 1 and 2; not met in pasture 3
	2	MSP	NA	NA	
	3	SNM/CLM	NA	NA	
Stahle FFR	1	SNM/OC	NA	NA	Improve-No data
Steiner FFR	1	SNM/OC	NA	NA	Improve-No data
	2	SNM/OC	NA	NA	
Toy	1	SNM/OC	NA	NA	Improve-Meeting
	2	SNM/CLM	NA	NA	
	3	SM	NA	NA	
	4	SNM/OC	NA	NA	
West Castle	1	SNM/OC	NA	NA	Improve-Not met
Whitehorse/Antelope	1	SNM/CLM	NA	NA	Improve-Not met
	2	SNM/CLM	NA	NA	
	3	SM	NA	NA	
	4	SM	NA	NA	
	5	SNM/CLM	NA	NA	
	6	SM	NA	NA	
	7	SM	NA	NA	

SM: Standard met

MSP: Standard not met but making significant progress

SNM/OC: Standard not met due to causes other than current livestock management practices

SNM/CLM: Standard not met due to current livestock management practices

NA: Standard not applicable

Owyhee Resource Management Objectives (ORMP; objective VEGE 1 and ORMP-FEIS Table VEG-2)

- Improve unsatisfactory vegetation health/condition (greater than 10% early seral or less than 40% late seral)
- Maintain satisfactory vegetation health condition (less than 10% early seral and greater than 40% late seral)

Potential forage production

The potential production of forage species in the Toy Mountain Group allotments, based on ecological site descriptions listed in site guides (USDA NRCS, 2010) and the proportion of each ecological site represented in each allotment, provides an estimated average annual production of grass and grass-like species per acre in the normal year. The number of acres that would be required to support one AUM is presented in Table VEG-3 by allotment, based on the assumption that the amount of forage necessary to support one AUM is 1,000 pounds and the maximum allowable utilization limit is 50 percent¹³⁷.

Conservative stocking is a term commonly used by range researchers to define a level of grazing between light and moderate, generally involving about 30 to 40 percent use of forage (Appendix E). Table VEG-3 also provides allotment-specific data for the number of acres that would be necessary to support one AUM, assuming a maximum allowable utilization of 35 percent, and if ecological condition were at reference site conditions and livestock distribution were equal throughout the allotment.

Table VEG-3: Allotment-specific stocking rates for the Toy Mountain Group allotments based on the normal-year production of grass and grass-like species

Allotment	Acres public land	Potential stocking rate at 50% maximum allowable utilization	Potential stocking rate at 35% maximum allowable utilization	Stocking rate at the current authorized active use level
Alder Creek FFR	525	4.2	6.0	8.8
Boone Peak	9,455	3.6	5.2	4.5
Box T	7,421	4.9	7.0	4.2
Bridge Creek	2,567	2.7	3.9	3.9
Browns Creek	3,862	9.1	13.0	4.8
Garrett FFR	660	5.6	8.0	11.0
Hart Creek	24,968	7.4	10.6	11.6; 12.1*
Josephine FFR	346	4.0	5.7	17.3
Lone Tree	7,131	4.5	6.5	4.7; 8.9**
Louisa Creek	9,911	4.8	6.8	5.3
Meadow Creek FFR	360	6.2	8.8	7.7
Moore FFR	327	3.3	4.7	6.8
Munro FFR	78	4.8	6.9	5.2
Quicksilver FFR	178	3.1	4.5	5.6
Red Mountain	14,680	6.0	8.6	7.3
Stahle FFR	87	3.2	4.6	2.6
Steiner FFR	1,574	4.3	6.2	16.1
Toy	3,569	3.9	5.5	3.8
West Castle	9,785	10.9	15.5	13.9
Whitehorse/Antelope	38,016	6.0	8.6	8.7

¹³⁷ A management action listed in the ORMP to meet the livestock grazing management objective is to limit upland forage utilization by livestock on key herbaceous forage species to 50 percent unless a higher or lower level of use is appropriate to meet standards for rangeland health (objective LVST 1; management action #4).

* The current rest rotation grazing schedule for the Hart Creek allotment results in 11.6 acres per AUM in year one and 12.1 acres per AUM in year two, when one does not include acreage of rested pastures.

** The stocking rate for the Lone Tree allotment is 4.7 acres per AUM when one considers authorized active use in the mandatory condition line of the permit, but 8.9 acres per AUM when annual use is limited to 800 AUMs identified in additional terms and conditions.

Data provided in Table VEG-3 were calculated assuming ideal conditions with forage production from all ecological sites at potential, equal livestock distribution throughout the allotment, and utilization at either 50 or 35 percent of grass and grass-like species, respectively. These ideal conditions are not present within any of the Toy Mountain Group allotments. Vegetation inventories identify most sites within each allotment in an ecological status less than potential natural condition (ORMP FEIS Table VEG-2 (USDI BLM, 1999b)). Equal distribution of livestock is limited by topography, distance from water, and other natural factors that do not allow even utilization in all portions of each pasture. Appropriate seasons of grazing use limit the availability of forage in some pastures. In addition, measured utilization includes vegetation removed by native herbivores, including insects, and harvest efficiency, including damage to plants caused by trampling and loafing. Finally, management objectives to sustain resource values in addition to forage production often do not allow opportunity to maximize use of forage produced for livestock production.

Vegetation production data from the late 1970s inventory indicate that many sagebrush/bunchgrass communities within the Toy Mountain Group allotments were less productive than the reference sites described in ecological site descriptions. These data reveal that the majority of sites sampled exhibited a reduced dominance by deep-rooted bunchgrasses and a commensurate increase in shrub species, shallow-rooted grasses, or both¹³⁸. Localized areas may have crossed the threshold to the identified states dominated by Sandberg bluegrass, squirreltail, annual grasses, and annual forbs in the understory, with little or no sagebrush and with root-sprouting shrubs such as rabbitbrush in the shrub layer, as a result of historic improper livestock grazing and/or altered fire return intervals. The vegetation shift away from the reference site plant communities noted for the allotment likely occurred in the late portion of the 19th century and the early years of the 20th century, a period when public land livestock grazing was controlled little and stocking rates were high (Vavra, Laycock, & Pieper, 1994) (USDI BLM, 2002a).

Biological Soil Crusts

Microbiotic crusts are an important component of many ecological sites in the Toy Mountain Group allotments. They function as living mulch by retaining soil moisture and discouraging annual weed growth. By occupying interspatial areas between larger plants, these crusts reduce wind and water erosion, and enhance soil stability, soil moisture retention, and site fertility by fixing atmospheric nitrogen and contributing soil organic matter (Belnap, et al., 2001).

Weeds

In Idaho, the BLM works closely with the Idaho Department of Agriculture, Tribal governments, and county governments to combat noxious weeds. Cooperative weed management arrangements utilize local, state, and Federal resources to inventory and treat weed infestations on both public and private lands. Populations are recorded, treated, monitored, and retreated as their presence is known. Undiscovered noxious weeds may also exist. Approximately 470 sites as listed in Table VEG-4 within the Toy Mountain Group allotments recorded primarily whitetop, with limited to isolated sites of Canada thistle, leafy spurge, rush skeletonweed, Russian knapweed, and Scotch thistle along roads, while tamarisk locations are associated with stream channels. Noxious weed control is ongoing in this area.

¹³⁸ Analysis of production data used for this EA is on file in the Idaho BLM project record and is available to the public upon request

Table VEG-4: Noxious Weed Occurrences in the Toy Mountain Group Allotments

Allotment	Canada Thistle	Leafy Spurge	Rush Skeletonweed	Russian Knapweed	Scotch Thistle	Tamarisk	Whitetop	Totals
Alder Creek FFR							1	1
Box T	5						23	28
Browns Creek					6		30	36
Garrett FFR							2	2
Hart Creek				1	1	1	31	34
Louisa Creek	4						28	32
Red Mountain					10		52	62
Toy	2	25			3		9	39
West Castle				1		2	33	36
Whitehorse/Antelope			1	18	11	1	169	200
Grand Total	11	25	1	20	31	4	378	470

Invasive annual species, including cheatgrass and a number of non-native annual forbs, are present in the Toy Mountain Group allotments, as noted in the 2013 supplemented initial allotment reviews, rangeland health assessments, and evaluation reports, but they do not dominate in any areas. Livestock grazing is one of a number of vectors for the introduction of noxious weeds and invasive species to public lands and increasing the spread of existing incursions. Livestock may spread weeds and invasive species through transport on fur and on hoofs, as well as through ingestion and later defecation of viable seeds. This transport can occur from sources used prior to scheduled use of public land, between sites within a given allotment, or to locations outside the allotment at the end of the grazing season. Soil disturbance resulting from livestock concentration adjacent to water sources, salting areas, and routes of travel provides sites for establishment of weeds and invasive species.

3.1.2 Soils

Introduction

A compilation of quantitative and qualitative data, along with aerial photography, GIS data, soil survey information, and site visits contributed to the evaluation of conditions for the upland soil and watershed resources¹³⁹. Findings were gathered in the Rangeland Health Assessment (RHA) and Determinations and serve as integral supplemental documents that are hereby included by reference to provide the foundation on which upland soil watershed conditions are based. These documents disclose whether the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a) and Idaho Standards for Rangeland Health (Appendix A) are met, provide rationales and causes for the allotments to be meeting or not meeting Standards, and supply the background for alternative development.

Due to the limited amount of quantitative monitoring data and the variable nature of soil impacts associated with grazing management, it is difficult to allocate concrete disturbance acres with each alternative, especially since no range developments or other projects are proposed that would offer an additional comparison of impacts. The following soils analysis therefore focuses on a qualitative rather

¹³⁹ All relevant soils data and reports available in Soils Project File; rangeland monitoring data available in Range Project File

than quantitative approach of analyzing the environmental effects of proposed grazing activities on the existing conditions of soil and upland resources for the Toy Mountain Group allotments (Map GEN-1).

Existing Condition

Geology, Parent Material, and Soils¹⁴⁰

The 20 Toy Mountain Group allotments are situated within the Jordan, Middle Snake-Succor, and Upper Owyhee sub-basins and encompass approximately 175,588 acres. There are 99 different soil map units representing a wide variety of inherent characteristics that influence vegetative growth, erosion potential, site productivity, drainage class, available water supply, and more. Soils within the analysis area have been mapped and are described in the Owyhee County Soil Survey (USDA NRCS, 2003) and Elmore County Soil Survey (USDA NRCS, 1991). They delineate soil map units, landforms, and vegetation components, and provide interpretive information on soil use and management. These soils are associated with ecological sites (Map ECOL-1) that are developed based on environmental factors such as vegetation, soils, and hydrology (Section 3.1) (Caudle, DiBenedetto, Karl, Sanchez, & Talbot, 2013). Discrepancies across the survey boundaries are present because the two soil surveys have not been correlated by the NRCS.

Volcanic and igneous rocks, including rhyolite, granodiorite, and basalt, make up the majority of the source materials for soils. Sedimentary rocks and alluvial and lacustrine deposits are also well represented and contribute, along with climate and other natural agents like fire, to an array of vegetative compositions. Soil and hydrologic function are critical parameters for functioning upland areas. Toy Mountain Group soils are shallow to moderately deep (with deeper inclusions) and generally have a xeric (dry) soil moisture regime, and a mesic (moist) to cryic (very cold) soil temperature regime (USDA NRCS, 2003) (USDA NRCS, 1991).

Most soils (90 percent) are well-drained (USDA NRCS, 2003) (USDA NRCS, 1991). Hydrologic soil groups are dominated by moderate to slow infiltration rates in the lower elevations east of the Owyhee Mountains; slow infiltration rates are also present across the upper elevations of the central portion and the Combination Ridge area in the southernmost Toy Mountain Group allotments. The remaining mid-elevation eastern foothills and much of the mid-to-lower elevations west of Toy Mountain Pass along Antelope Ridge and Triangle Valley can have very slow infiltration rates when thoroughly wet, especially if they have a high clay content and shrink-swell potential. As a result, high runoff is possible.

Dominant soil surface textural classes in the Toy Mountain Group area are gravelly loams and fine sandy loams. Unweathered bedrock is present around Boone Peak, in the Red Mountain pastures, pasture 6 of Whitehorse/Antelope, and several of the Combination Ridge area allotments. Basalts in the higher elevations of Boone Peak are mostly associated with protruding exposures under very shallow soils, while steep slopes and breaklands of main drainages and smaller outcrops and cliffs around abrupt elevation changes expose rhyolitic and granitic parent material.

Clay content is mostly low (10 to 20 percent) to moderate (20 to 30 percent) across the majority of Toy Mountain Group soils. Allotments located in the lower elevations east of the Owyhee Mountains contain extensive calcareous soils from lacustrine sediments that make up the badlands around Oreana and extend onto the mid-elevation upper terraces and structural benches along the foothills. Clay content is reduced around Boone Peak and areas where outcrops and rockier soils dominate, especially below rims and steeper drainages.

¹⁴⁰ Detailed compilations of soil survey information are summarized by allotment and pasture and are available in the project record.

Based on inherent soil characteristics, the potential erosion hazard from water in the Toy Mountain Group allotments is rated as 41 percent slight and 42 percent moderate. Soils rated at moderate erosion potential levels are found along steeper mountainous terrain that ranges from 15 to 50 percent slope on average, though some areas can exceed slope gradients above 50+ percent. Increased erosion potential, especially from disturbed ground, can lead to movement of sediments and deplete soil productivity due to the removal or degradation of the surface horizon.

Severe erosion hazards are present in 11 percent of Toy Mountain Group soils that contain tributaries and streams with slopes from 30 to 50+ percent. These include Bates, Pickett, and Hart Creeks, as well as the lower reaches of Browns and Rock Creeks, and the upper reaches of Louisa and Josephine Creeks. Also included are some uplands of pasture 3 of the Red Mountain allotment; pastures 1, 6, and 7 of the Whitehorse/Antelope allotment; pasture 1 of the Box T allotment; and portions of the Boone Peak FFR, Stahle FFR, Alder Creek FFR, Red Mountain, Hart Creek, and West Castle allotments.

Very severe erosion hazards are present on 4 percent of the Toy Mountain Group allotments and are primarily associated with very steep (up to 70+ percent) tributaries and streams that often form distinct canyons dissecting the landscape. They include but are not limited to Castle, Rock, Buckaroo, Browns, White Horse, Louisa, and Rose Creeks. Uplands along slopes that define the break into the badlands in the north-central portion of pasture 1 of the Whitehorse/Antelope allotment are also identified as containing severely erosive soils.

Naturally, erosion hazard potential on any slope greater than 30 percent increases and is closely tied to inherent soil characteristics and ground cover for protection in the form of litter, vegetation, biological soil crusts, and rock fragments. Wind erosion hazard is rated low to moderately low, with the exception of moderately high rates in mountainous terrain and high rates in some of the mid- to lower elevations along the eastern foothills.

Idaho Rangeland Health Standard 1 & ORMP Objectives

Existing conditions in the Toy Mountain Group allotments are a reflection of past and present management activities and natural processes. Detailed information and summaries for each allotment, its general setting, individual data compilation by pasture, and more detailed rationales are available in the Rangeland Health Assessments (RHAs) and Determinations and reflect current conditions for Standard 1. The following section groups the 20 allotments by identifying whether they are meeting Standard 1 and ORMP Objectives, and if not, whether current livestock grazing is a causal factor.

The compilation and analysis of all data and information available for an allotment describes the current rangeland health conditions and identifies changes or trends in rangeland health over time. Twelve of the 17 indicators utilized in the rangeland health field assessments (RHFAs) are related to Standard 1 - Watershed Health (USDI BLM, 2000) (USDI BLM, 2005). The analysis of watershed condition considers both soil stability and hydrologic indicators and the natural range of physical and vegetative characteristics.

Tables SOIL-2, -4, and -6 summarize all indicator ratings and corresponding percentages related to Standard 1 by allotment with detailed breakouts by pasture being available in the associated 2013 RHA and Determinations (USDI BLM 2013). The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site (USDI BLM, 2000) (USDI BLM, 2005). Because overall watershed conditions are closely tied to the health of the biotic community, the current imbalance of vegetative composition in allotments/pastures is a concern, including areas of invasive annual grasses and where juniper encroachment is not a portion of site potential as identified in ecological site descriptions.

Ground cover trend data from nested frequency plots provide additional quantitative short- and long-term information and also contributed greatly to the evaluation of Standard 1. Due to the difficulty in displaying these data in a summarized fashion, they can be reviewed in the project file.

The term *at risk* has been applied to several allotments and pastures that are meeting Standard 1, meaning that watershed health is satisfactory but that it is near a point where soil and hydrologic function are susceptible to degradation. This takes into consideration a lag in response time, specifically between soils and vegetation, where soils may be resilient enough to withstand resulting adverse effects of declining vegetation conditions over a longer time before showing a measurable divergence from reference conditions. Similarly, soils may be the first to show declining conditions while the vegetation community is still relatively robust.

At-risk pastures are more susceptible to unpredictable stressors such as drought, wildfire, weed invasion, and climate change. These already-compromised pastures have lower resilience to livestock grazing when coupled with unpredictable stressors and the subsequent potential to move toward failing to meet Standards.

Labeling an allotment or pasture as at-risk serves to identify those pastures that deserve increased attention, with the intention of altering management when needed to avoid failing to meet the Standard in the future. While being labeled at-risk for Standard 1 was not a main driver for developing the alternatives, the majority of the identified at-risk allotments/pastures are failing other Standards that require improvement of resource conditions. As a result, the grazing management changes proposed under most action alternatives will be beneficial to upland soil and watershed function.

Allotments Meeting Standard 1

Available data were reviewed and show that eight allotments are meeting ORMP objectives and Rangeland Health Standard 1 for upland watershed soils: the Boone Peak, Garrett FFR, Josephine FFR, Moore FFR, Munro FFR, Quicksilver FFR, Stahle FFR, and Steiner FFR allotments (Table SOIL-1).

Under Alternatives 2, 3, and 4, BLM would also make changes to allotment boundaries consistent with the application for permit renewal that would result in a new grouping of the three pastures of the existing Quicksilver FFR allotment and one pasture of the existing Stahle FFR allotment to create the new Red Hill FFR allotment (see Section 2.4.14.2). Pastures that would be part of the newly configured Red Hill FFR are meeting Standard 1 and ORMP objectives (Table SOIL-1).

Table SOIL-1: Summary of allotments (by pasture) meeting ORMP objectives and Standard 1

Allotment Name	Pastures Meeting but Considered to be at Risk for Juniper	No Additional Risks Identified
Boone Peak*	x	
Garrett FFR		x
Josephine FFR*	x	
Moore FFR*	x	
Munro FFR		x
Quicksilver FFR	P1, P3	P2
Red Hill FFR**	P1, P3, P4	P2
Stahle FFR*	x	
Steiner FFR	P1, P2	

*single pasture allotment

**newly configured allotment under Alts 2, 3, 4 only

P = Pasture

Table SOIL-2 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site.

Table SOIL-2: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators from RHFAs

Allotment Name	Departure of Watershed Function Indicators From Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Boone Peak	78	19	3	0	0
Garrett FFR	71	28	1	0	0
Josephine FFR	100	0	0	0	0
Moore FFR	83	17	0	0	0
Munro FFR	58	42	0	0	0
Quicksilver FFR	81	19	0	0	0
Stahle FFR	83	0	17	0	0
Steiner FFR	75	25	0	0	0

Boone Peak, Josephine FFR, Moore FFR, Quicksilver FFR, Stahle FFR, and Steiner FFR Allotments

Biotic function is reduced in portions of the Boone Peak, Josephine FFR, Moore FFR, Quicksilver FFR, Stahle FFR, and Steiner FFR allotments due to the encroachment of western juniper. This has contributed to a shift in the plant community as juniper starts to dominate. Although these allotments are identified to be at risk, soil and hydrologic indicators still show adequate watershed function and site stability and suggest that proper nutrient, hydrologic, and energy cycling are maintained.

Garrett FFR and Munro FFR

The Garrett FFR and Munro FFR allotments are meeting Standard 1 with no additional risks identified.

Allotments and FFRs not Meeting Standard 1 but Making Significant Progress

Available data were reviewed and show that the upland watershed Standard is not being met due to reasons other than current livestock grazing management practices in Meadow Creek FFR but that the allotment is making significant progress toward meeting the Standard (Table SOIL-3).

Table SOIL-3: Allotment not meeting ORMP objectives and Standard 1 but making significant progress

Allotment Name	Causes for Not Meeting Standard 1	
	Historic Grazing Practices	Fire Regime and Juniper
Meadow Creek FFR	x	x

Table SOIL-4 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for the RHFA. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site.

Table SOIL-4: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators from RHFAs

Allotment Name	Departure of Watershed Function Indicators From Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Meadow Creek FFR	50	17	33	0	0

The Meadow Creek FFR allotment is not meeting Standard 1 due to altered hydrologic cycling, nutrient cycling, and energy flow relative to the expected reference conditions, although significant progress toward meeting the Standard has been made. While degradation in biotic conditions due to the alteration of fire regimes and the subsequent encroachment of western juniper has affected soil stability and hydrologic function, historic livestock grazing is the main contributor to the failure to meet watershed Standard 1. Past livestock grazing management practices have resulted in accelerated soil erosion, reduced biological crusts, and soil surface loss and degradation. Much of the decline in soil stability and hydrologic function can be associated with a change in deep-rooted bunchgrasses to more shallow-rooted species.

Based on the available data, however, slight improvements through the recent years indicate conditions of suitable vegetation that benefits soil stability and hydrologic function. Although hydrologic cycling, nutrient cycling, and energy flow relative to watershed health are altered and are not meeting Standard 1, significant progress toward meeting the standard has been made in the Meadow Creek FFR allotment.

Allotments and FFRs not Meeting Standard 1 – Livestock is Not a Causal Factor

Available data were reviewed and show that the upland watershed Standard is not being met due to reasons other than current livestock grazing management practices in six allotments. These include Bridge Creek, Browns Creek, Hart Creek, Lone Tree, Louisa Creek, and West Castle allotments (Table SOIL-5).

Table SOIL-5: Summary of allotments (by pasture) not meeting ORMP objectives and Standard 1 with livestock grazing management practices not being a factor

Allotment Name	Causes for Not Meeting the Standard		Pastures Meeting
	Historic Grazing Practices	Fire Regime and Juniper	
Bridge Creek*	x	x	
Browns Creek	P1, 2		
Hart Creek	P1, 2		P3
Lone Tree		P1, 3, 4, 5, 6	
Louisa Creek	P3	P4, 5	P1, 2
West Castle*	x		

*single pasture allotment

P = Pasture

Table SOIL-6 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site.

Table SOIL-6: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators from RHFAs

Allotment Name	Departure of Watershed Function Indicators From Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Bridge Creek	56	19	11	14	0
Browns Creek	42	21	22	4	0
Hart Creek	51	35	12	1	0
Lone Tree	73	23	4	0	0
Louisa Creek	79	12	7	1	2
West Castle	47	39	14	0	0

Bridge Creek, Browns Creek, Hart Creek, Louisa Creek, and West Castle Allotments

The Bridge Creek, Browns Creek, Hart Creek, Louisa Creek, and West Castle allotments are not meeting Standard 1 because hydrologic function and soil/site stability attributes are not properly functioning. A transition of native deep-rooted vegetation to more shallow-rooted bunchgrasses caused by historic grazing practices reduces infiltration, which leads to surface runoff, soil surface sealing, and erosion. The reduced species diversity and the localized invasion of annual grasses (primarily in Hart Creek and West Castle) have compromised soil nutrient replenishment and result in decreased ecological function that leads to a lack of ability for proper nutrient cycling, hydrologic cycling, and energy flow.

Juniper Encroachment – Bridge Creek, Lone Tree, and Louisa Creek Allotments

The encroachment of western juniper in the Bridge Creek, Lone Tree, and Louisa Creek allotments contributes to altered hydrologic function and to the deviation in functional structural groups expected within the sagebrush communities. Juniper aggressively competes for water and nutrients in intercanopy zones. In many cases, especially in xeric sites (i.e., south facing slopes, shallow soils), interspatial vegetation cover is greatly reduced. When this happens, nutrients are concentrated in canopy areas, soil moisture regimes vary, microclimates of interspatial areas are extreme and unfavorable for plant germination, infiltration capacities are shifted, and erodibility is increased. The subsequent runoff can result in sheet erosion, rilling, pedestaling, and sediment redistribution and adversely affect watershed function of upland soils.

Allotments and FFRs Not Meeting Standard 1 – Livestock Grazing is a Causal Factor

Available data were reviewed and show that watershed standards are not being met in five allotments: the Alder Creek FFR, Box T, Red Mountain, Toy, and Whitehorse/Antelope allotments (Table SOIL-7).

Under Alternatives 2, 3, and 4, BLM would also make changes to allotment boundaries consistent with the application for permit renewal. This would result in a new grouping of pastures 2 and 3 of the existing Red Mountain allotment, the one pasture of the existing Bridge Creek allotment, the one pasture of the existing Boone Peak allotment, and a holding pasture (livestock handling facility previously undefined in the northern portion of pasture 4 of the Box T allotment) to create the proposed Pickett Creek allotment (see Section 2.4.15.2).

In addition, pasture 1 of the existing Red Mountain allotment would be separated from the other two pastures and would become the proposed Fossil Creek allotment (see Section 2.4.15.2). Both of the new allotments contain pastures that were identified as not meeting watershed health standards, so that Pickett Creek and Fossil Creek allotments are not meeting Standard 1 and ORMP objectives (Table SOIL-7).

Table SOIL-7: Summary of allotments (by pasture) not meeting ORMP objectives and Standard 1, with livestock grazing management practices being a significant contributing factor

Allotment Name	Causes for Not Meeting		Pastures Meeting but Considered to be at Risk for Juniper	Pastures Meeting
	Current and Historic Grazing Practices	Fire Regime and Juniper		
Alder Creek FFR*	x	x		
Box T	P1, 2, 3	P1, 2, 3	P4	
Fossil Creek**	P1			
Pickett Creek**	P1, 3			P2, 4
Red Mountain	P1, 2			P3
Toy	P1, 3, 4		P2	
Whitehorse/Antelope	P1, 2, 3, 5, 6			P4, 7

*single pasture allotment

**newly configured allotment under Alts 2, 3, 4 only

P = Pasture

Table SOIL-8 provides a summary of watershed-related ratings of soil/site stability and hydrologic function indicators for RHFAs. The ratings for the indicators express the degree of departure from the expected natural range of physical and vegetative characteristics of the applicable ecological site

Table SOIL-8: Summary of departure from reference conditions for watershed-related soil/site stability and hydrologic function indicators from RHFAs

Allotment Name	Departure of Watershed Function Indicators From Reference Condition (%)				
	none-to-slight	slight-to-moderate	moderate	moderate-to-extreme	extreme
Alder Creek FFR	33	25	42	0	0
Box T	53	32	10	4	1
Red Mountain	61	29	8	2	1
Toy	50	32	14	4	0
Whitehorse/Antelope	58	27	11	4	0

Alder Creek, Box T, Fossil Creek, Pickett Creek, Red Mountain, Toy, Whitehorse/Antelope Allotments

The above allotments are not meeting Standard 1 due to signs of impaired watershed function (Table SOIL-6) indicative of soil surface erosion, water runoff, and litter movement. Increased pedestaling of plants, and in some cases rocks, along with mechanical damage to soils by livestock hoof action, have affected soil structure, while localized compaction in a number of allotments inhibits plant growth and has led to a reduction in infiltration capacity. As a result, soil surface loss and degradation have occurred, as evidenced by increased historical and active erosional patterns and localized bare ground.

Biological soil crusts vary from being present to being absent or greatly reduced. In many cases, soil crusts are present under the protection of shrubs but are lacking in surrounding interspaces. Where trampling is heavy or where congregation is common, soil crusts are removed. Since biological soil crusts are a primary contributor of site stability and nitrogen, their loss contributes to increased water and wind erosion and a potential reduction of soil fertility.

While not all pastures within the allotments are failing (Table SOIL-5), some are functioning with reduced resilience and indicate elevated susceptibility to soil and hydrologic disturbance events. As shown by the reduced frequency in deep-rooted native bunchgrasses and adverse changes in plant communities (Section 3.3), the impending soil degradation could worsen over time and are a concern.

The invasion of annual grasses and the resulting departure from expected vegetative conditions (Section 3.1.1) contribute to an ongoing competition with native bunchgrasses and herbaceous vegetation. It is

difficult to display the hidden risk factors to soils associated with sites that are dominated by a monoculture of annual invasive plants, such as cheatgrass, medusahead, and bulbous bluegrass. On the positive side, invasive annuals provide short-lived spring forage for livestock, offer cover for watershed protection by reducing raindrop energy, and protect from wind erosion. On the negative side, the presence of annuals adversely affects soil hydrology and deep percolation due to a lack of root diversity and root depth.

Soil protection can differ due the short growing period variability of annual production and lack of above-ground shrub structure for capturing snow and ameliorating wind effects at the soil surface. The biological and chemical changes and competitive advantages of invasive over native plant species can therefore have long-lasting effects on soil watershed health. These are often difficult to assess because they are not readily observable, like mechanical damage, or are only measurable with additional equipment or laboratory analysis.

Much of the decline in soil stability and hydrologic function, however, can be associated with a change in deep-rooted bunchgrasses to more shallow-rooted species. Historic and current livestock grazing practices, including spring and critical-growing-season use, often with little or no rest, contribute to reduced watershed function that is amplified by a lack of species diversity. Physical hoof impacts often provide for favorable sites where invasive plants are able to establish so that the localized invasion of annuals often worsens the already compromised replenishment of soil nutrients.

This decreased ecological function leads to a lack of capability for proper nutrient cycling, hydrologic cycling, and energy flow and indicates that soil and hydrologic function are compromised. Thus, the six allotments (Table SOIL-5) are not meeting Standard 1 and current livestock grazing is a significant contributing factor.

3.1.3 Riparian/Water Quality

Desired Condition, Resource Objectives, & Assessment/Monitoring Methods

The resource objective specified in the Owyhee Resource Management Plan (ORMP) for both riparian-wetland areas and stream channels is to maintain or improve riparian-wetland areas to attain proper functioning and satisfactory conditions. Riparian-wetland areas include streams, springs, seeps, and wetlands. The BLM has primarily utilized the lotic and lentic¹⁴¹ proper functioning condition (PFC)¹⁴² protocol to determine whether the objective is being met. The PFC assessment is a qualitative determination that refers to a consistent approach for considering hydrology, vegetation, and erosion/deposition (soils) attributes and processes to assess the condition of riparian-wetland areas. Essentially, a PFC determination rates the state of resiliency that will allow a riparian area to maintain integrity during a high-flow event, which then allows the area to provide desired values.

Leonard and Karl (1995) state, “Riparian-wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bed load, and aid floodplain development; improve flood-water retention and ground-water recharge; develop root masses that stabilize stream banks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. Even though this

¹⁴¹ Lotic = flowing water. Lentic = standing water, e.g. a seep or pond.

¹⁴² PFC Assessments are based on Interagency Technical Reference 1737-15, *A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lotic Areas* and 1737-16, *A User Guide to Assessing Proper Functioning Condition and Supporting Science for Lentic Areas*

definition emphasizes lotic areas, it can be applied to lentic areas with minor modification. For example, instead of 'adequate vegetation...present to dissipate stream energies...' an assessment would determine whether adequate vegetation, etc., is present to dissipate wind and wave energies."

The BLM employs several additional assessment methods that aid in interpreting the condition of the water and riparian resources and thus determine whether the ORMP objective is being met. In 2011, the multiple indicators monitoring method (MIM)¹⁴³ was finalized. MIM is a quantitative monitoring and analysis method used to assess the long-term trend of a designated stream reach. MIM can be used to help evaluate livestock grazing management (i.e., timing, duration, and frequency of grazing) by determining how the vegetation and stream channels are impacted by herbivore use. Monitoring data is gathered for 10 indicators to assess the existing condition and trend of the stream banks, channel, and vegetation. From the gathered data, an evaluation is made for the stream reach in relation to the following three capability groups: 1) ecological status, 2) vegetation-erosion resistance (i.e., stream bank stability), and 3) site wetland status. Depending on the objectives for an area or stream, the MIM method can also be modified (MMIM) allowing the observers to collect either the three short-term indicators (stubble height, woody browse, and bank alteration) or any of the indicators of interest.

The ORMP objective for water quality is to meet or exceed State of Idaho water quality standards on all Federally administered waters. To assess and interpret whether this objective is met for an area, a stream, and/or a stream segment, the BLM utilizes watershed information collected by IDEQ and collects water temperature and bacteria information internally.

Watersheds

The Toy Mountain Group allotments fall within both the Middle Snake-Succor and the Jordan 4th field hydrologic unit code (HUC) or sub-basin (Tables RIPN-1-3; Map CMLV-1). The Jordan sub-basin encompasses a large area in southwest Idaho and southeast Oregon. The headwaters of Jordan Creek originate in the western section of the Owyhee Mountains, in southwest Idaho, then flow mostly west into Oregon, entering near the community of Jordan Valley. The general flow characteristics of the Jordan Creek watershed are from east to west, with most of the headwaters within Idaho. The major topographic features include the Silver City Mountain Range to the north, South Mountain to the south and Combination/Antelope Ridges to the east.

The Middle Snake-Succor is an arid sub-basin characterized by hot summer temperatures. The streams within the watershed are tributaries to the Snake River and are generally low-volume streams that have a combination of high ambient temperatures, poor shading, low flow volume, flow alteration, and naturally warm springs, which often lead to exceedances of the temperature standard. Other issues identified that affect the streams in the watershed are nutrient loading and in-stream channel erosion causing sediment loading (Idaho DEQ, 2013).

Idaho Department of Environmental Quality (IDEQ) designates basins, sub-basins, and assessment units in order to manage the state's waterways. The 2010 Integrated Report (303(d)/305(b)) uses assessment units (AUs) within the sub-basin. Assessment units are groups of similar streams within a sub-basin that have similar land use practices, ownership, or land management. Assessment units are assessed for pollutants and assigned beneficial uses with associated Water Quality Standards. The Beneficial Use Reconnaissance Program (BURP) is a field assessment of stream segments. Within the sub-basins and the Toy Mountain Group allotments, there are portions of 31 AUs that include 237.8 miles of stream that are not meeting one or more of the watershed's beneficial uses, 3.6 miles that are fully supporting the

¹⁴³ MIM: Interagency Technical Reference 1737-23, *Multiple Indicator Monitoring of Stream Channels and Streamside Vegetation*

beneficial uses, and 84.6 miles that have not been assessed (Idaho Department of Environmental Quality Final 2010 Integrated Report, 2011).

Table RIPN-1: Jordan sub-basin summary per IDEQ

Hydrologic Unit Code	17050108
Size	Approximately 385,000 acres in Idaho (approximately 740,000 acres total)
§303(d) Listed Stream Segments	Jordan Creek (2 Segments), Cow Creek, Soda Creek, Rock Creek, Spring Creek, Louisa Creek, Louse Creek
Beneficial Uses Affected	Cold water aquatic life, primary contact recreation, salmonid spawning, special resource water
Pollutants of Concern	Sediment, bacteria, flow alteration, oil and grease, pesticides, metals, pH, mercury, temperature
Major Land Uses	Irrigated agriculture, rangeland, forest, mining, riparian

Table RIPN-2: Middle Snake-Succor sub-basin summary per IDEQ

Hydrologic Unit Code	17050103
Size	Approximately 2,002 square miles
§303(d) Listed Stream Segments	Snake River (3 segments), Birch Creek, Brown Creek, Castle Creek, Corder Creek, Cottonwood Creek, Hardtrigger Creek, Jump Creek, McBride Creek, North Fork Castle Creek, Pickett Creek (2 segments), Poison Creek, Rabbit Creek, Reynolds Creek, Sinker Creek, South Fork Castle Creek, Squaw Creek, Squaw Creek Unnamed Tributary, Succor Creek (2 segments)
Beneficial Uses Affected	Cold water aquatic life, salmonid spawning, primary contact recreation, drinking water supply, special resource water
Pollutants of Concern	Bacteria, dissolved oxygen, flow alteration, nutrients, pH, sediment, temperature
Major Land Uses	Rangeland, irrigated agriculture

Table RIPN-3: IDEQ sub-basins, assessment units, and 303(d) streams for the Toy Mountain Group allotments

Sub-basin (4th Field HUC)	Allotment	Assessment Unit (AU)	303(d) Streams¹⁴⁴ on BLM lands	Cause for 303(d) listing
Jordan	Boone Peak	ID17050108SW015_02	Bridge Creek Ditch Creek Meadow Creek Unnamed Creek	temperature
		ID17050108SW015_02	Unnamed Creek	Temperature flow alteration
	Box T	ID17050108SW015_03	Meadow Creek	temperature flow alteration
		ID17050108SW015_02	Bridge Creek Ditch Creek	temperature flow alteration
	Louisa Creek	ID17050108SW013_02	Unnamed Creek	temperature flow alteration
		ID17050108SW013_03	Rock Creek	temperature
		ID17050108SW014_02	Louisa Creek Unnamed Creek	sediment temperature

¹⁴⁴ 303(d) streams are water quality limited and are in Category 5

Sub-basin (4 th Field HUC)	Allotment	Assessment Unit (AU)	303(d) Streams ¹⁴⁴ on BLM lands	Cause for 303(d) listing
				flow alteration
	Meadow Creek FFR	ID17050108SW015_02	Unnamed Creek	temperature flow alteration
	Steiner FFR	ID17050108SW013_02	Unnamed Creek	temperature flow alteration
		ID17050108SW013_03	Rock Creek	temperature
				sediment
		ID17050108SW014_02	Louisa Creek	temperature flow alteration
	Toy	ID17050108SW015_02	Bridge Creek Ditch Creek Meadow Creek Spring Creek Unnamed Creek	temperature flow alteration
Middle Snake- Succor	Whitehorse/ Antelope	ID17050108SW013_02	Unnamed Creek	temperature flow alteration
	Boone Peak	ID17050103SW016_02	Pickett Creek South Fork Pickett Creek Unnamed Creek	temperature sediment
	Browns Creek	ID17050103SW019_02	Browns Creek Cat Creek Unnamed Creek	sediment
		ID17050103SW016_02	Pickett Creek Unnamed Creek	temperature sediment
			Browns Creek Buckaroo Creek Cat Creek Little Browns Creek Unnamed Creek	sediment
		ID17050103SW019_02		
		ID17050103SW019_03	Browns Creek	sediment
	Hart Creek	ID17050103SW019_04	Browns Creek	sediment
	Quicksilver FFR	ID17050103SW016_02	South Fork Pickett Creek	temperature sediment
	Red Mountain	ID17050103SW016_02	Pickett Creek Unnamed Creek	temperature sediment
		ID17050103SW019_02	Browns Creek	sediment
	West Castle	ID17050103SW019_03	Browns Creek Unnamed Creek	sediment
		ID17050103SW019_04	Browns Creek	sediment
	Whitehorse/ Antelope	ID17050103SW019_02	Browns Creek Buckaroo Creek Unnamed Creek	sediment
		ID17050103SW019_03	Browns Creek Unnamed Creek	sediment

Streams and Springs & Riparian-Wetland Areas

The National Hydrography Dataset (NHD) was produced between 1996 and 2000 via a collaborative effort among the Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), and other federal, state and local agencies. The NHD is a comprehensive set of digital geospatial data for surface water features such as streams, rivers, lakes and springs/seeps and is maintained by the USGS. Additionally, the NHD is the BLM standard for assessing stream mileage and flow type (USDI USGS, 2011).

According to the NHD, the Toy Mountain Group allotment contains approximately 49.6 miles of perennial and 72.1 miles of intermittent streams¹⁴⁵ (Table RIPN-4). The NHD does not differentiate between intermittent and ephemeral streams; thus, many of the intermittent streams are ephemeral drainages that do not support riparian vegetation (USDA FSA, 2011). Major perennial streams located all or in part within the allotments include Alder, Bridge, Castle, Gilmore, Hart, Josephine, Lightning, Louisa, Meadow, North Boulder, North Fork Castle, Pickett, Rock, Rose, Snow, South Fork Castle, White Horse, and Wickiup Creeks. Additionally, the NHD identifies 48 springs/seeps that occur on BLM lands within the allotments (Table RIPN-4).

Table RIPN-4: Total miles of perennial and intermittent stream, and number of springs (derived from the NHD) within the Toy Mountain group 3 allotments.

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
Alder Creek 01FFR Total	0.13	0.71	0
Alder Creek		0.71	
Unnamed Creek	0.13		
Boone Peak 01 Total	13.25	2.76	6
Bridge Creek	0.33	1.14	
Ditch Creek	0.28		
Hart Creek	1.72		
Lightning Creek		0.25	
Meadow Creek	0.95		
North Boulder Creek		0.59	
Pickett Creek	1.10	0.38	
South Fork Pickett Creek	2.12		
Unnamed Creek	6.73	0.32	
Box T Total	12.12	2.42	14
01	4.1	0.93	6
Alder Creek		0.22	
North Fork Castle Creek	0.30	0.33	
Unnamed Creek	3.80	0.39	
02	4.4	0	0
Unnamed Creek	4.40		
03	1.1	1.5	0

¹⁴⁵ Perennial: Contains water throughout the year, except for infrequent periods of severe drought

Intermittent: Contains water for only part of the year, but more than just after rainstorms and at snowmelt

Ephemeral: Flows in normal water years only in direct response to precipitation and channel is above the water table at all times

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
Meadow Creek		1.47	0
Unnamed Creek	1.08		
04	2.5	0	8
North Fork Castle Creek	1.66		
Unnamed Creek	0.88		
Bridge Creek 01 Total	5.14	1.26	0
Bridge Creek	0.38	1.26	
Ditch Creek	1.92		
Gilmore Creek	1.42		
Unnamed Creek	1.42		
Brown's Creek Total	19.79	0	0
01	13.6	0	0
Browns Creek	1.86		
Cat Creek	0.39		
Unnamed Creek	11.34		
02	6.2		
Browns Creek	0.63		
Unnamed Creek	5.56		
Garrett FFR Total	1.87	1.35	0
01	0.4	0	0
Unnamed Creek	0.37		
02	0.1	0.19	0
Alder Creek		0.19	
04	0.7	0.4	0
Castle Creek		0.44	
Horse Thief Creek	0.50		
Unnamed Creek	0.21		
06	0.5	0.7	0
Castle Creek		0.72	
Unnamed Creek	0.49		
Hart Creek Total	81.32	2.85	4
01	24.5	2.9	0
Bates Creek	1.49		
Hart Creek	1.19	2.25	
Little Hart Creek	3.00		
Pickett Creek	0.39	0.60	
Unnamed Creek	18.46		
02	34.5	0	0
Browns Creek	3.83		
Unnamed Creek	30.61		

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
03	22.4	0	4
Browns Creek	1.98		
Buckaroo Creek	2.97		
Cat Creek	3.48		
Little Browns Creek	2.14		
Unnamed Creek	11.79		
Josephine FFR Total	NA		
Lone Tree Total	11.45	6.96	0
01	6.8	4.2	0
Josephine Creek		2.62	
Rock Creek		0.98	
Rose Creek		0.58	
Unnamed Creek	6.81		
04	0	1.0	0
Rose Creek		1.04	
05	1.0	0	0
Unnamed Creek	0.99		
06	3.6	1.5	0
Wickiup Creek	0.9	1.50	
Unnamed Creek	2.63		
Louisa Creek Total	22.99	4.13	1
01	4.8	0.8	1
Cow Valley Creek	0.96		
North Fork Castle Creek		0.83	
Unnamed Creek	3.88		
02	2.58	0	0
Unnamed Creek	2.58		
03	9.0	2.7	0
Louisa Creek		2.69	
Unnamed Creek	9.06		
04	2.6	0	0
Unnamed Creek	2.57		
05	1.9	0	0
Josephine Creek	0.19		
Louisa Creek	0.42		
Unnamed Creek	1.32		
06	2.1	0.6	0
Rock Creek		0.6	
Unnamed Creek	2.1		
Meadow Creek FFR Total	NA		

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
Moore FFR 01Total	1.82	0.16	0
Josephine Creek	0.33	0.16	
Unnamed Creek	1.50		
Munro FFR- 01	NA		1
Quicksilver FFR Total	0.44	0.17	0
01	0.2	0	0
South Fork Pickett Creek	0.15		
02	0	0.2	0
North Boulder Creek		0.15	
03	0.3	0	0
Unnamed Creek	0.24		
Red Mountain Total	33.24	6.66	0
01	16.1	0	0
Bates Creek	2.85		
Fossil Creek	2.66		
Unnamed Creek	10.61		
02	11.7	3.6	0
Bates Creek	0.18		
Little Hart Creek	1.72		
Pickett Creek		3.59	
Unnamed Creek	9.75		
03	5.5	3.1	0
Browns Creek	2.01		
Hart Creek		2.09	
Little Hart Creek	1.51		
Pickett Creek		0.99	
Unnamed Creek	1.83		
Stahle FFR Total	NA		
Steiner FFR Total	5.28	2.63	0
01	4.1	2.6	0
Louisa Creek		0.28	
Rock Creek		2.35	
Unnamed Creek	4.13		
02	1.2	0	0
Unnamed Creek	1.15		
Toy Total	10.14	0.62	0
01	4.3	0	0
Bridge Creek	0.90		
Meadow Creek	1.80		
Unnamed Creek	1.64		

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
02	1.8	0.2	0
Bridge Creek	0.45		
Ditch Creek	0.60		
Gilmore Creek		0.17	
Unnamed Creek	0.70		
03	1.5	0	0
Spring Creek	0.60		
Unnamed Creek	0.94		
04	2.5	0.5	0
North Boulder Creek		0.45	
Spring Creek	0.20		
Unnamed Creek	2.31		
West Castle 01Total	28.34	0	0
Browns Creek	0.95		
Unnamed Creek	27.39	0.33	
Whitehorse/Antelope Total	122.7	17.50	23
01	21.1	2.1	2
Browns Creek	1.19		
Buckaroo Creek	1.17		
Castle Creek		2.08	
Unnamed Creek	18.72		
02	27.4	2.4	1
Alder Creek		0.41	
Buckaroo Creek	1.07		
Castle Creek		1.90	
Cottonwood Creek	0.30		
Horse Thief Creek	0.14		
Unnamed Creek	25.88		
03	37.5	3.1	8
Alder Creek		0.45	
Castle Creek		2.62	
Cottonwood Creek	2.59		
Horse Thief Creek	3.40		
Pixley Creek	1.20		
Unnamed Creek	30.27		
04	12.5	0	5
White Horse Creek	2.79		
Unnamed Creek	9.67		
05	4.5	0.4	2
North Fork Castle Creek		0.21	

Allotment/Pasture	Intermittent/ Ephemeral Miles	Perennial Miles	Number of Springs
White Horse Creek	0.34		
Unnamed Creek	4.12		
06	16.7	9.1	4
Castle Creek		1.95	
North Fork Castle Creek		3.96	
South Fork Castle Creek		1.81	
West Spring Creek	1.56		
White Horse Creek		1.36	
Unnamed Creek	15.10		
07	3.2	0.5	1
Alder Creek	0.17	0.47	
Cottonwood Creek	0.72		
Horse Thief Creek	0.40		
Castle Creek		1.90	
Cottonwood Creek	0.30		
Horse Thief Creek	0.14		
Unnamed Creek	1.89		

Existing Conditions

Owyhee Resource Management Plan

The ORMP identified perennial and fish-bearing streams that occur on public lands and included an assessment of the mileage present and the condition at the time (1999) (Table RIPN-5). The ORMP refers to streams and riparian-wetland areas in unsatisfactory condition as those that were either functional-at-risk or non-functional.

Table RIPN-5: Toy Mountain Group 3 allotments with ORMP-identified perennial stream condition

Allotment	Stream Name	Condition	Perennial Miles
Boone Peak	Pickett Creek	Unsatisfactory	1.29
Box T	Meadow Creek	Unsatisfactory	0.97
Hart Creek	Pickett Creek	Unsatisfactory	1.14
Lone Tree	Josephine Creek	Unsatisfactory	2.79
	Rock Creek	Unsatisfactory	0.99
	Rose Creek	Unsatisfactory	1.63
	Rock Creek	Satisfactory	0.27
Louisa Creek	Louisa Creek	Unsatisfactory	3.35
	NF Castle Creek	Unsatisfactory	1.01
	Rock Creek	Unsatisfactory	0.8
Quicksilver FFR	Pickett Creek	Unsatisfactory	0.33
Red Mountain	Pickett Creek	Unsatisfactory	4.52
Steiner FFR	Rock Creek	Satisfactory	1.74
	Louisa Creek	Unsatisfactory	0.24
	Rock Creek	Unsatisfactory	1.16
Whitehorse/Antelope	NF Castle Creek	Unsatisfactory	0.95

Idaho Rangeland Health Standards 2, 3, and 7 & Rangeland Health Assessments¹⁴⁶

Allotment-specific existing condition information related to riparian areas and water resources can be found in the Riparian/ Water Quality Section 3.3 below. If an allotment is not specified below, Standards 2, 3, and 7 do not apply because there are no riparian or water resources present on the BLM portion of the allotment.

The Rangeland Health Assessments and Initial Allotment Reviews contain additional detail related to the condition of the allotments, as originally compiled in 2006, and supplemented in 2013. Additional details regarding the information presented in the current EA can be found in the assessment documents. The BLM used this information to assess and evaluate current rangeland health conditions, and the Allotment-specific Affected Environment Sections below detail the information as it relates to Standard 2 (Riparian Areas and Wetlands), Standard 3 (Stream Channels and Floodplains), and Standard 7 (Water Quality) (also see Table RIPN-6).

Table RIPN-6: Determination of Idaho Rangeland Health Standards 2, 3, and 7 for the 20 Toy Mountain Group allotments

Allotment Name	Meeting Standards	Standards Not Meeting, But Making Significant Progress	Standards Not Being Met	Standards Not Being Met <i>and</i> Current Livestock Grazing is a Significant Causal Factor	Standards Not Applicable
Alder Creek FFR	7			2, 3	
Boone Peak		2, 3		7	
Box T			7	2, 3	
Bridge Creek			7	2, 3	
Brown's Creek				2, 3, 7	
Garrett FFR	7	2, 3			
Hart Creek				2, 3, 7	
Josephine FFR					2, 3, 7
Lone Tree	7			2, 3	
Louisa Creek				2, 3, 7	
Meadow Creek FFR					2, 3, 7
Moore FFR	2, 3				7
Munro FFR	2				3,7
Quicksilver FFR				2, 3, 7	
Red Mountain		2, 3		7	

¹⁴⁶ For additional, detailed information regarding the condition of the streams and springs, the associated riparian-wetland areas, and the water quality, see the Rangeland Health Assessments & Initial Allotment Reviews available in the project record and by request at the Owyhee Field Office.

Allotment Name	Meeting Standards	Standards Not Meeting, But Making Significant Progress	Standards Not Being Met	Standards Not Being Met and Current Livestock Grazing is a Significant Causal Factor	Standards Not Applicable
Stahle FFR					2,3,7
Steiner FFR	7			2, 3	
Toy			7	2,3	
West Castle				2,3,7	
Whitehorse/ Antelope				2,3,7	

3.1.4 Special Status Plants

Introduction

The resource objective for special status species, as specified in the Owyhee Resource Management Plan (ORMP), is to manage special status species and habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended. In addition, BLM Manual 6840 (USDI BLM, 2008) directs the BLM to ensure that any activities authorized, funded, or carried out do not contribute to the need to federally list any species as threatened or endangered, all while managing for multiple uses. Standard 8 of the Idaho Standards for Rangeland Health is used to assess whether this objective is being met. GIS data, aerial photography, site visits, plant observation records made by BLM staff (on file at the Owyhee Field Office and available upon request), and the IDFG Idaho Fish and Wildlife Information System (IFWIS; (IDFG, 2011)) were used to evaluate the current conditions of special status plants. In addition, a file search at the Owyhee Field Office (OFO) was conducted to obtain observation records not yet entered into the IFWIS database. Findings were compiled in the Toy Mountain Group Grazing Permit Renewal EA: Special Status Plant Specialist Report (available upon request from the Owyhee Field Office). The report discloses if Standard 8 (Threatened and Endangered Plants and Animals) is being met, provides rationales and causes for meeting or not meeting the Standard, and supplies background on the analysis methods for special status plant species. The following analysis focuses on existing conditions and environmental effects of the proposed grazing activities on special status plants and their habitats in the Toy Mountain Group project area (Map GEN-1, Table SSPS-1).

Table SSPS-1 identifies the allotments in which special status plant species are known to occur. Due to the vast and rugged nature of the land, unknown occurrences of special status plants are likely to be present as well. One species, Idaho milkvetch, with one occurrence on private land, is mapped at a broad scale with the central location of their occurrence outside the project area and the outer reaches of the buffer (4- to 10-mile diameter) intersecting allotments within the project area. This occurrence is not considered for the purposes of this analysis due to the lack of specific location information and the extended period of time since last visited (circa 1980).

Table SSPS-1 also identifies special status plant species ranks. The species rank provides an estimate of the risk of elimination of an occurrence. Table SSPS-1 provides the status by species at two management scales, the State of Idaho/Oregon and Idaho BLM. Oregon state rankings were included because the cumulative impacts analysis area includes a portion of Oregon.

Table SSPS-1: Special Status Plant Species, Status, and general habitat type by allotment

Species	ID BLM Status ¹	State Rank ²	Habitat	Allotment
Idaho milkvetch (<i>Astragalus conjunctus</i>)	Type 4	ID 2/OR SNR	Soil derived from volcanic (primarily basalt) parent material on rocky hilltops, hillsides and canyon benches within sagebrush scabland or steppe communities up to the lower boundary of pine forest. Perennial forb.	Boone Peak ¹⁴⁷ Box T Toy ¹⁴⁸
Mudflat milkvetch (<i>Astragalus yoder-williamsii</i>)	Type 3	ID 3/OR SNR	Idaho populations occur on fine loamy soils in, big sagebrush, or rabbitbrush communities on flat to very gentle slopes; low to mid elevation, perennial forb. (Mancuso & Moseley, 1993)	Box T Toy
King's eyelashgrass (<i>Blepharidachne kingii</i>)	Type 3	ID 1/OR SNR	Greasewood, shadscale, ephedra, rabbitbrush, Indian ricegrass, budsage, sagebrush and Idaho fescue communities in gravelly soils of calcareous, limestone basin floors, low elevation, perennial graminoid. (NatureServe) (Kartesz, 1988)	Hart Creek
Earth lichen (<i>Catapyrenium congestum</i>)	Type 4	ID 2/OR SNR	Biologic soil crust in undisturbed Wyoming sage or salt desert shrub vegetation grows on sandy, sometimes saline, soil and rarely on sandstone in dry areas; low elevation, Lichen (Efloras, 2012) (NatureServe)	Hart Creek
Doublet (<i>Dimeresia howellii</i>)	Type 3	ID 2/OR SNR	Open gravelly or sandy places, talus slopes screens, serpentine; low elevation, annual forb. (Efloras, 2012)	Lone Tree
White eatonella (<i>Eatonella nivea</i>)	Type 4	ID 3/OR SNR	Sandy or volcanic soils, usually loose and gravelly soils, with sagebrush; low elevation, annual forb. (Efloras, 2012)	Hart Creek

¹⁴⁷ Cinnabar Mountain RNA/ACEC monitoring in 2013, which is located in Boone Peak Allotment, analyzed in ACEC Sections.

¹⁴⁸ IDFG buffer for this EO overlaps into these allotments but this plant has no specific EO in either allotment.

Species	ID BLM Status ¹	State Rank ²	Habitat	Allotment
Shockley's buckwheat (<i>Eriogonum shockleyi</i> var. <i>packardiae</i>)	Type 4	ID 2/OR 4	Sandy clay derived from volcanic ash slopes and washes within sparsely vegetated salt desert shrub, sagebrush, or juniper woodlands. Perennial forb. (Efloras, 2012) (NatureServe)	West Castle
White-margined wax plant (<i>Glyptopleura marginata</i>)	Type 4	ID 3/OR SNR	Sandy-gravelly or loose ash soils, arid grasslands often with shadscale in salt desert shrub vegetation; low elevation, annual forb. (Efloras, 2012)	Hart Creek West Castle
Stoutstem threadplant (<i>Nemacladus rigidus</i>)	Type 4	ID SNR/OR SNR	Desert scrub, juniper woodland, sandy and gravelly wash bottoms, volcanic ash, low elevation; annual forb. (NatureServe)	Hart Creek
Simpson's hedgehog cactus (<i>Pediocactus simpsonii</i> var. <i>robustior</i>)	Type 4	ID 3/OR SNR	Rocky or sandy benches and canyon rims in low sage, mountain sage, or salt desert shrub vegetation; low-mid elevation, perennial cactus.	Hart Creek ¹⁴⁹ Garrett FFR ¹⁵⁰
Antelope Valley beardtongue (<i>Penstemon janishiae</i>)	Type 3	ID 2/OR SNR	Clay soils derived from volcanic ash or lake bed sediment in sagebrush communities, perennial forb (Atwood, 2001).	West Castle
One-flowered goldenweed (<i>Pyrrocoma howellii</i>)	Type 4	ID 1/OR SNR	Grassy springs or streambanks; wet or dry, often alkaline meadows; mid elevation, perennial forb.	Box T
Least snapdragon (<i>Sairocarpus kingii</i>)	Type 3	ID 1/OR SNR	Sandy-gravelly or loose ash soils, arid grasslands often with shadscale in salt desert shrub vegetation; low elevation, annual forb. (Efloras, 2012)	West Castle

Idaho BLM Types:

1. ESA listed, Proposed & Candidate Species - These are species federally identified as threatened, endangered, proposed, or candidate.
2. Rangewide/Globally Imperiled Species (high endangerment) - These are species that have a high likelihood of being listed in the foreseeable future due to their global rarity and significant endangerment factors.
3. Range-wide or State-wide Imperiled (moderate endangerment) - These are species that are globally rare or very rare in Idaho, with moderate endangerment factors. Their global or state rarity and the inherent risks associated with rarity make them imperiled species.

¹⁴⁹ Simpson's hedgehog cactus was reported to be in Hart Creek allotment but there is not an IDFG Elemental Occurrence associated with this report.

¹⁵⁰ Simpson's hedgehog cactus was observed in Garrett FFR allotment but there was not an IDFG Elemental Occurrence completed at the time of observance (2002),BLM NPR Botanist completed documentation retroactively (EO has not yet been assigned a number as of Nov. 2013.).

4. **Species of Concern** - These are species that are generally rare in Idaho with small populations or localized distribution and currently have low threat levels. However, due to the small populations and habitat area, certain future land uses in close proximity could significantly jeopardize these species.

State Ranks for ID and OR:

1. Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction or extirpation, typically with 5 or fewer occurrences.
 2. Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (extirpation), typically with 6-20 occurrences.
 3. Rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.
 4. Not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.
 5. Demonstrably widespread, abundant, and secure.
- SNR identifies that a species is not ranked within that state.

Species Descriptions

Idaho milkvetch (*Astragalus conjunctus*) occurs primarily in Owyhee County in Idaho and Malheur and Harney Counties in Oregon (Atwood, 2001). Within the project area, this species is known from one occurrence each (IDFG, 2011) in the following allotments: Box T and Toy and in Cinnabar Mountain ACEC (Boone Peak). This perennial forb typically grows on soil derived from volcanic (primarily basalt) parent material on rocky hilltops, hillsides, and canyon benches within sagebrush scrubland or steppe communities, up to the lower boundary of pine forest (Atwood, 2001). Known occurrences within the project area are threatened by livestock grazing (IDFG, 2011).

Mudflat milkvetch (*Astragalus yoder-williamsii*) is restricted to the Owyhee uplands of west-central Owyhee County, Idaho. In the Uplands it occurs south of the main Owyhee Range, from near Triangle to the upper Deep Creek drainage, mostly west of Battle Creek, to the Pleasant Valley area, within approximately 6 miles of the Oregon state line (Mancuso & Moseley, 1993). For this project area, this species is known from one occurrence in the Toy allotment (EO 4032) and three occurrences in the Box T (EO 379) allotment. Current status of these populations is unknown (IDFG, 2011). Known occurrences within the project area are threatened by soil disturbance, OHV use, livestock trampling.

King's eyelashgrass (*Blepharidachne kingii*) is a perennial grass found in Owyhee County, Idaho, and in Oregon, Nevada, and east, central, and southern California. Within the project area, this species is known from two occurrences (IDFG, 2011) in the following allotment: Hart Creek (EO 2541 and 620). This grass flowers in late May to late June, and sometimes in the fall following late summer rains. King's eyelashgrass habitat is within the sagebrush communities in gravelly soils in lacustrine deposits. Known occurrences within the project area are threatened by soil disturbance, OHV use, livestock trampling.

Earth lichen (*Catapyrenium congestum*) is only known from two locations worldwide: southern Idaho and San Juan Co., Utah (McCune & Rosentreter, 2007). This squamulose lichen is known from one occurrence (IDFG, 2011) in the following allotment: Hart Creek (EO 3530). Earth lichen is often found on saline soil in *Artemisia tridentata* habitats (McCune B., 1994). The current status of this population is unknown in the Hart Creek allotment. Managing for healthy biological soil crusts requires that grazing occur when crusts are less vulnerable to shear and compressional forces (Belnap, et al., 2001). Other threats are OHV use and non-native weed invasion.

Doublet (*Dimeresia howellii*) is found in Owyhee County, Idaho, and Baker County, Oregon and Northeast California and Northwest Nevada (Hitchcock, 2001). Within the project area, this species is known from one occurrence (IDFG, 2011) in the Lone Tree (EO 3587) allotment. This taprooted, cushion-like dwarf annual is found in dry, rocky, or gravelly soil, often in barren habitats, in the high

desert, foothills, and drier parts of the mountains. The known occurrence within the project area is threatened by soil disturbance, OHV use, and non-native weed invasion.

White eatonella (*Eatonella nivea*) is a diminutive (1-4 cm.) densely tomentose annual in central and southwest Idaho, southeast Oregon, and central Washington. Its habitat is shrub steppe vegetation on poorly developed soils in dry, sandy or volcanic deserts areas. Within the project area, this species is known from one occurrence (IDFG, 2011) in the Hart Creek (EO 1350) allotment. White eatonella is an ephemeral annual that is thought to flower in response to warming temperatures and available spring moisture. Thus, the number of flowering individuals and the number of flowers produced fluctuates widely from year to year. In some years, it may not appear at all (Camp, 2011). Known occurrences within the project area are threatened by soil disturbance, OHV use, and non-native weed invasion.

Shockley's buckwheat (*Eriogonum shockleyi* var. *packardiae*) is endemic to ash outcrops in the Owyhee uplands region (Mansfield, 2010). This perennial forb typically grows on sandy clay derived from dark brown-colored volcanic ash slopes and washes within sparsely vegetated salt desert shrub, sagebrush, or juniper woodlands (Efloras, 2012) (Mansfield, 2010) (NatureServe). Within the project area, this species is known from one occurrence (IDFG, 2011) in the West Castle (EO 3479) allotment. Known occurrences within the project area are threatened by soil disturbance, OHV use, livestock trampling, and non-native weed invasion.

White-margined wax plant (*Glyptopleura marginata*) is a somewhat-fleshy dwarf, tufted winter-annual that flowers from April through July (Efloras, 2012). The flowers open in the morning and close in the mid-afternoon (Davis, 1952). The leaf margins are conspicuously white-crustose. The white-margined wax plant is endemic to southwest Idaho and southeast Oregon, as well as Utah and California. Within the project area, this species is known from four occurrences (IDFG, 2011) in the Hart Creek (EOs 2450 & 1442) and West Castle (EO 4708 & 2972) allotments. Known occurrences within the project area are threatened by soil disturbance, OHV use, livestock trampling (only around areas of concentrated use), and non-native weed invasion.

Stoutstem threadplant (*Nemacladus rigidus*) is found in southwest Idaho, western Oregon, Nevada and California. It is a diminutive (1-9 cm) compact annual forb, it flowers in May to June and sometimes into July (Cronquist, 1984), and grows in sandy and gravelly wash bottoms and volcanic ash soils. Within the project area, this species is known from one occurrence (IDFG, 2011) in the Hart Creek (EO 0) allotment. The known occurrence within the project area is threatened by soil disturbance, OHV use, livestock trampling (only around areas of concentrated use), and non-native weed invasion (NatureServe).

Simpson's hedgehog cactus (*Pediocactus simpsonii* var. *robustior*) is a small cactus, seldom more than 8 inches tall, that often grows in small clumps and has showy flowers that bloom without stalks at the top of the cactus from April to June. The main feature of this cactus is the long central spines. This cactus is known to grow on thin, rocky soils on ridge tops, desert valleys, and low mountains. Within the project area, this species is known from one occurrence (IDFG, 2011) in the Garrett FFR (EO 0) allotment. Simpson's hedgehog cactus is found in southern Idaho, north-central Oregon, western Washington, and Nevada. The greatest threat to this taxon is collecting by cactus collectors (Taylor, 2005).

Antelope Valley beardtongue (*Penstemon janishiae*) has a range from Elmore and Owyhee Counties in Idaho to southeast Oregon, very northeast California, and central to northeast Nevada (NatureServe). Within the analysis area, this species is known from one occurrence within the West Castle watershed (IDFG, 2011). This perennial forb/subshrub typically grows on clay soils derived from volcanic ash or lake bed sediment in sagebrush communities (Atwood, 2001). Known occurrences within the project area are threatened by OHV use, road use, non-native weed invasion, and recreational mining (IDFG, 2011).

One-flowered goldenweed (*Pyrocoma howellii*) is endemic to Idaho, Oregon, Washington and California and blooms all summer as water recedes in alkaline meadows, marshes, mudflats, and near springs at mid- to high elevations (Turner, 2006). Within the project area, this species is known from one occurrence (IDFG, 2011) in the Box T (EO 4344) allotment. The known occurrence within the project area is threatened by soil disturbance, livestock trampling (only around areas of concentrated use), and non-native weed invasion (NatureServe).

Least snapdragon (*Sairocarpus kingii*) is found in southwestern Idaho, southeast Oregon, Nevada, east, central, and southern California. This annual is rarely seen in dry years, but its bloom period is April to July. Least snapdragon plants are not usually more than 30 cm tall and do not stand out among the other plant of the habitat (Living Desert, 2011). Within the project area, this species is known from one occurrence (IDFG, 2011) in the West Castle (EO 0) allotment. The known occurrence within the project area is threatened by soil disturbance, OHV use, livestock trampling, and non-native weed invasion (NatureServe).

Existing Conditions

No populations of BLM special status plant species are known to occur on BLM-managed lands in the following allotments: Alder Creek FFR, Boone Peak, Bridge Creek, Browns Creek, Josephine FFR, Louisa Creek, Meadow Creek FFR, Moore FFR, Munro FFR, Quicksilver FFR, Red Mountain, Stahle FFR, Steiner FFR, and Whitehorse/Antelope allotments.

Standards for Rangeland Health

As noted above in Table SSPS-1, the following six allotments have known occurrences of special status plant species on BLM-managed lands: Box T, Garrett FFR, Hart Creek, Lone Tree, Toy, and West Castle. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2003 and 2006, and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation, and determination documents. The BLM used information in those documents to address the Allotment-specific Affected Environment.

Allotments Meeting Standard 8

All allotments in the Toy Mountain Group Grazing Permit Renewal EA project area are meeting Standard 8 for SSPS plants due to the absence of federally listed plant species and current plant status information for the BLM special status plants in the project area.

3.1.5 Wildlife and Special Status Animals

Wildlife Habitat

Four Level IV Ecoregions of Idaho are represented within the Toy Mountain Group allotments (Map GEN-2) (McGrath, et al., 2002). These ecoregions are distinguished by differences in physiography, precipitation, and elevation. The Unwooded Alkaline Foothills ecoregion occurs at the lowest elevations and is generally the flattest and driest of the ecoregions represented. Salt desert shrub and xeric sagebrush steppe are the dominant vegetation communities. The Owyhee Uplands and Canyons ecoregion occurs in the Triangle Flat/Rock Creek Basin and the mid to upper slope portions of the Owyhee Front and is characterized by deep canyons, badlands, and rocky outcrops covered predominantly with low sagebrush steppe and juniper woodland vegetation communities. The Semiarid Uplands ecoregion occurs on the higher elevation portions of the Owyhee Front where granitic and volcanic mountains and hills ascend out of the lower elevation lava plains; these areas typically are dominated by mesic shrub steppe, mountain shrub, and juniper woodland vegetation communities interspersed with stands of Douglas-fir forest in

drainage headwaters and where favorable conditions exist. The Partly Forested Mountains ecoregion occurs at the highest elevations (more than 7,000 feet) on the crest of Silver City Range. Within the Toy Mountain group allotments this ecoregion is characterized by relatively steep-sided mountain peaks dominated by vegetation communities similar to those found in the surrounding Semiarid Uplands.

The dominant upland wildlife habitats within the Toy Mountain Group allotments are generally defined by differences in elevation and precipitation (Maps GEN-3a and GEN-3b). Salt desert shrub habitats composed of greasewood and shadscale communities occur at the lowest elevations (less than 4,000 feet) in the northern portion of the Toy Mountain Group (i.e., Hart Creek pastures 1 and 2, West Castle; Map GEN-3a). Above these communities, xeric sagebrush steppe habitats dominated by Wyoming big sagebrush communities gradually transitions to low sagebrush communities as elevation increases and terrain becomes rougher mid-slope on the Owyhee Front (e.g., Red Mountain pastures 2 and 3, Hart Creek pasture 3, Whitehorse/Antelope pasture 2). Mesic shrub steppe habitat dominated by mountain big sagebrush and bitterbrush communities along the higher elevation slopes (more than 5,000 feet) of the Owyhee Front and the rolling terrain surrounding the Triangle Flat/Rock Creek Basin (e.g., Whitehorse/Antelope pastures 3 and 4; Map GEN-3b) become more interspersed with mixed mountain shrub habitat composed of mixed patches of snowberry, serviceberry, chokecherry, and mountain mahogany communities on mountain-top slopes (more than 6,000 feet) and at the highest elevations along the crest of the Silver City Range (e.g., Boone Peak, Whitehorse/Antelope pasture 7). Douglas-fir stands at relatively similar elevations (more than 6,500 feet) or located on north-facing slopes provide forest habitats and western juniper woodlands of varying densities, seral stages, and dominance are found throughout all of these communities above 5,000 feet. The expansion of juniper into former shrub steppe habitats has transformed many of the allotments (e.g., Bridge Creek, Lone Tree, and Louisa Creek) into woodlands.

Riparian-wetland wildlife habitats are more limited in abundance and extent especially at lower elevations (less than 3,500 feet) and include wet meadow complexes and woody and herbaceous riparian areas along perennial and intermittent streams and around springs, seeps, and reservoirs (Maps RIPN-1a and RIPN-1b). Upland and riparian vegetation communities within the Toy Mountain Group allotments are discussed in the Rangeland Vegetation, Water Resources, and Riparian-Wetland Affected Environment Sections.

Recent and historical wildfires (1990 to 2012) have modified wildlife habitats extensively within the Toy Mountain allotments (Map FIRE-1 by reducing juniper cover in some areas. Most of these burned areas are in various stage of natural recovery and currently consist of sagebrush communities of varying ages and development and native perennial grasslands with the more recent fire perimeters. Mountain big sagebrush and low sagebrush communities have recovered to late seral status in portions of the Whitehorse/Antelope and Louisa Creek allotments where the largest wildfires in the area occurred in the relatively recent past (1990 Castle Creek and 1994 West Spring wildfires). Nevertheless, isolated juniper stands and snags persist within the burn perimeters and currently provide a mosaic of successional habitat types that benefit a diversity of wildlife species.

Wildlife Species

Many wildlife species utilize a variety of habitats in the Toy Mountain allotments. These habitats provide forage, nesting substrate, and cover for a variety of bird, mammal, amphibian, reptile, and fish species common to southwestern Idaho and the Northern Great Basin region. Although all of the species are important members of native communities and ecosystems, most are common and have wide distributions within the allotments, state, and region. Consequently, the relationship of most of these species to the permit renewal process is not discussed here in the same depth as species upon which the BLM places management emphasis.

Although no threatened and endangered species listed under the Endangered Species Act (ESA) occur in the Toy Mountain allotments, several candidate species in consideration for listing were identified from the U.S. Fish and Wildlife Service's (USFWS) Endangered Species Program (USDI USFWS, 2011). BLM, USFWS, and Idaho Department of Fish and Game (IDFG) maintain an active interest in other special status species that have no legal protection under the ESA. BLM special status species are: 1) species listed or proposed for listing under the ESA, and 2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA (USDI BLM, 2008), which are designated as sensitive by the BLM State Director(s). Special status wildlife species discussed in this document include those listed on the Idaho BLM State Sensitive Species List (USDI BLM, 2003) and those afforded protection under the Bald and Golden Eagle Protection Act (BGEPA) (USDI USFWS, 1940) with potential to occur within the allotments and whose habitat may be affected by the current action.

One bird and one amphibian species are listed as candidates under the ESA, and six mammals, 17 birds, four reptiles, two amphibians, and one fish with special status potentially could occur within the Toy Mountain allotments and may be affected by the current action. Common and scientific names of special status wildlife species, their status, and occurrence potential within each Toy Mountain allotments are summarized in Appendix F.

Focal Special Status Animal Species

With the exception of a few well-studied species, current occurrence and population data for most special status animal species within the Toy Mountain allotments are limited due to a deficiency of surveys and directed research. Therefore, only a few focal special status animal species (Lambeck, 1997) will be discussed in detail individually. These species include the greater sage-grouse, Columbia spotted frog, and redband trout.

The USFWS has determined that greater sage-grouse and Columbia spotted frogs warrant listing under ESA (i.e., candidate species) but have been precluded due to higher priorities. The Idaho BLM has determined that redband trout are imperiled globally and range-wide (i.e., BLM Type 2 sensitive species). These species will be discussed in greater detail because they occur or possibly could occur within the Toy Mountain allotments, and they have been the subject of targeted surveys and periodic species-specific monitoring studies.

The focal species concept provides a link between single- and multi-species methods of wildlife conservation and management (Mills, 2007). Focal species serve as a set of species that define the characteristics of different spatial and compositional landscape attributes necessary for functional and healthy ecosystems (Lambeck, 1997) (Caro & O'Doherty, 2001). In short, because they are a sagebrush-obligate species, sage-grouse function as a surrogate for sagebrush communities and associated vertebrates (Rowland, Wisdom, Suring, & Meinke, 2006), while spotted frogs and redband trout serve as coarse proxies for the relative integrity of lentic and lotic systems (Reaser, 1996) (Thurow, Lee, & Rieman, 1997). Other special status animal species, migratory birds, raptors, and species of socioeconomic importance (e.g., big game) will be included in a general discussion by taxonomic groupings.

Greater sage-grouse

The greater sage-grouse is a sagebrush-obligate species that requires large areas of relatively undisturbed sagebrush steppe habitat. Sage-grouse were once abundant and concomitant with sagebrush steppe ecosystems across western North America (Schroeder, Young, & Braun, 1999); currently, however, their distribution has been reduced to nearly half of what it was historically (Schroeder, et al., 2004). Despite

long-term population declines, sage-grouse persist across more than 250,000 square miles of the sagebrush ecosystem (Schroeder, et al., 2004). Within this requisite sagebrush landscape, important seasonal habitats (e.g., wet meadows, higher elevation mesic shrublands) are also necessary (Connelly, Schroeder, Sands, & Braun, 2000).

Because sage-grouse are still broadly distributed, dependent on a diversity of heterogeneous seasonal habitats, and some populations are wide-ranging, they are expected to be vulnerable to changes to the sagebrush ecosystem. In addition, the maintenance of viable sage-grouse populations is of special concern to state and federal resource managers across the species' present range, and their persistence is important in the socio-political, economic, and environmental realms (Sands & Smurthwaite, 1992). On March 5, 2010, the USFWS submitted a new finding to the Federal Register which found that listing the greater sage-grouse was warranted but precluded by the need to take action on other species facing more immediate and severe extinction threats (USDI USFWS, 2010). The finding has changed the status of sage-grouse from a BLM Type 2 sensitive species to a candidate species under the ESA. Due to these factors, the focal species concept (Mills, 2007) is applicable to sage-grouse because they can serve as an umbrella species for broader conservation of the sagebrush habitats across the West (Rowland, Wisdom, Suring, & Meinke, 2006) (Hanser & Knick, 2011).

Habitat Characteristics

Western Regional Populations Broad-Scale

The Toy Mountain Group allotments are located in the Western Association of Fish and Wildlife Management Agencies (WAFWA) Snake River Plain Management Zone (MZ; (Stiver, et al., 2006)). The Northern Great Basin population within the Snake River Plain MZ (Garton, et al., 2011) is a large population in Nevada, southeast Oregon, southwest Idaho, and northwest Utah (Map WDLF-1). Of the three subpopulations identified by Connelly et al. (2004) within the Northern Great Basin population, the north-central Central Nevada/southeast Oregon/southwest Idaho (hereafter Owyhee) subpopulation overlaps the Toy Mountain allotments (Map WDLF-1).

Generally, habitat conditions have deteriorated or been altered to some degree throughout the entire distribution of sage-grouse. This has caused local extirpations or declines in sage-grouse populations throughout their historical range and in the Toy Mountain allotments and surrounding area. Connelly et al., (2004) conducted a population analysis by state but not by management zone, population, or subpopulation; annual rates of change for sage-grouse in Idaho suggest a long-term decline for sage-grouse in Idaho. More recently, Garton et al. (2011) conducted a population analysis of the Northern Great Basin population based on data from 1965 to 2007. During the assessment period, the proportion of active leks decreased and average number of males per active lek declined by 17 percent (Garton, et al., 2011). Although the Garton et al. (2011) analysis is more detailed than the Connelly et al. (2004) analysis, both indicated similar trends for sage-grouse populations in the Snake River Plain MZ.

Northern Great Basin Population/Owyhee Subpopulation Mid-Scale

Recently, Idaho BLM initiated a modeling effort to identify preliminary priority sage-grouse habitat (PPH) within the Snake River Plain MZ (Makela & Major, 2012). Priority habitat includes breeding, late brood-rearing, and winter concentration areas. Because priority habitat areas have the highest conservation value for maintaining the species and its habitat, it is BLM policy to identify these areas in collaboration with respective state wildlife agencies (as per WO IM 2010-071), and maintain, enhance, or restore conditions for greater sage-grouse and their habitat within PPH areas (as per WO IM 2012-043). Model results indicate that the Toy Mountain Group allotments encompass large and contiguous areas of PPH (Map WDLF-1).

Owyhee Front/Triangle Local Population Fine-Scale

A review of the 2012 PPH output revealed that the area around the Toy Mountain group allotments in one of the critical input data layers (i.e., Idaho Sage-grouse Key Habitat Planning Map) had, for the most part, not been refined since its initial creation in the early 2000s. Much of the area was coarsely classified as Conifer Encroachment (R3). Review of recent (2012) aerial imagery and an OFO land cover classification (Bunting & Strand, 2008) of the area have provided better habitat information and edits to be incorporated into the 2013 Greater Sage-grouse Habitat Planning Map (as per IM ID-2013-010). The update identifies large areas of currently Key Habitat (K) that were misclassified as R3 across the OFO, especially in the Toy Mountain Group area (Map WDLF-2). Appendix F contains two tables that quantify the acres of Preliminary Priority Habitat that occur on each allotment and pasture.

Based on lek surveys, incidental observations, and a telemetry study of sage-grouse from the Owyhee Front/Triangle local population, seasonal locations show that the Toy Mountain Group allotments contain differing amounts of lekking, breeding, upland summer, early and late brood-rearing riparian summer, and winter seasonal habitats (Map WDLF-3). Typically, sage-grouse in the vicinity of the Toy Mountain Group allotments congregate on communal strutting grounds (i.e., leks) located at lower elevations from March to early May. The nesting season occurs soon after, extending from May to late June. Broods remain with females for several more months as they move from early brood-rearing areas (e.g., forb- and insect-rich upland areas surrounding nest sites) to moister, higher elevations that support late brood-rearing and summer habitats (e.g., wet meadows and riparian areas) from June to August. Local sage-grouse remain at higher elevations through the fall and early winter (i.e., September through November) where they begin to congregate into large groups and gradually move to lower elevations in winter (i.e., December through February) where sagebrush is exposed above typical snow accumulations and is available for forage and cover.

Columbia Spotted Frog

The Great Basin Distinct Population Segment (DPS) of the Columbia spotted frog occurs in eastern Oregon, southwestern Idaho, and northern Nevada. On April 23, 1993, the USFWS submitted a finding to the Federal Register which found that listing the spotted frog in some parts of its range (i.e., Great Basin DPS) was warranted but precluded by the need to take action on other species (USDI USFWS, 1993). As a candidate species under the ESA and in conformance with a U.S. District court-approved settlement agreement, Columbia spotted frogs are awaiting review and additional information for potential listing as threatened or endangered by 2016 (Suthers & Myers, III, 2011).

The species is highly aquatic and is seldom found far from water. The largest populations occur in structurally complex wetlands with diverse pool and meadow components. Suitable sites contain shallow breeding pools and deeper water overwintering sites. Wet meadows, riparian wetlands, and stream courses are important as dispersal corridors among perennially occupied sites. Wetland and riparian habitat loss and degradation from conversion to irrigated pastures, dewatering of rivers for irrigation, drying of ponds due to drought or overuse, and reduction in riparian habitat quality due to overgrazing are the most serious threats to the maintenance of viable populations of spotted frogs (USDI USFWS, 1993), (Lohr & Haak, 2009), (USDI USFWS, 2012).

Based on surveys, research, and consistent demographic monitoring of the Owyhee subpopulation of the Great Basin DPS, spotted frogs emerge from hibernation in spring-fed or permanent streams with willows several days after these sites thaw; gravid females join males to breed soon after and oviposition commences within a week (Engle 2000). Although dates may vary among sites and between years, depending on temperature and snowmelt, the core-period dates of egg deposition and emergence of larvae (i.e., tadpoles) for the local population occurs roughly from late April through mid-June (Engle 2000; Patla and Keinath 2005 (Lohr & Haak, 2009), Lohr and Haak 2010; (Lohr, 2011); C. Mellison, pers.

comm., 2013). Research in the Owyhee Uplands has detected certain levels of natal and pond complex fidelity; however, various Wildlife Extension Agreements between the USFWS and private landowners in the last 5 years have demonstrated that spotted frogs will colonize newly constructed ponds and begin breeding within them the following year (K. Lohr, pers. comm., 2013). Seasonal migratory movements between breeding, foraging, and hibernating sites by Owyhee subpopulation frogs occurs along wet riparian corridors (Engle 2000). In addition, metamorphs (juveniles) have been observed making small-scale terrestrial nocturnal movements across uplands under moist conditions (e.g., during and after precipitation events) and with dropping temperatures during dry conditions (K. Lohr, pers. comm., 2013). Occupied and potential habitat for Columbia spotted frogs occurs within the Toy Mountain Group allotments (Map WDLF-4).

Redband trout

Redband trout of the Columbia River Basin are also a BLM Type 2 sensitive species. BLM manages the species under BLM Manual 6840 (USDI BLM, 2008) to prevent future ESA listing as threatened or endangered. Redband trout are the resident form of steelhead trout that historically returned from the ocean to spawn in streams throughout the Toy Mountain Group allotments' watersheds (now restricted by downstream dams). In the Owyhee Uplands, redband trout prefer cool streams with temperatures below 70° F (21° C). However, they can survive daily cyclic temperatures up to 80° F (27° C) for a short period of time (IDFG, 2006b). Habitat loss and fragmentation of currently occupied habitat are among the major threats identified as issues relevant to the maintenance of viable populations of redband trout.

Redband trout have been documented in various streams in and around the Toy Mountain Group allotments (Map WDLF-4). However, a recent range wide status update and conversations with IDFG fisheries biologists reveal that the number of streams formerly occupied by redband trout has decreased over the last 10 years in the Toy Mountain Group watersheds (Jordan and Middle Snake-Succor 4th level hydrologic units) (May, Writer, & Albeke, 2012); J.Kozfkay, pers. comm., 2013).

Migratory Birds, Raptors, and other Birds (including Special Status Species)

A variety of special status bird species (Appendix F), including BLM Type 5 Watch List Species, occur or may occur within the Toy Mountain Group allotments. The majority of these species are associated with shrub steppe, grassland, or riparian habitats. Brewer's sparrow, sage sparrow, and sage thrasher are heavily reliant on sagebrush steppe for nesting and foraging. Loggerhead shrike, black-throated sparrow, and green-tailed towhee are less reliant on sagebrush but are dependent on shrubland habitat. Grassland species include long-billed curlew and grasshopper sparrow. Brewer's blackbird, calliope hummingbird, and willow flycatcher typically are associated with riparian areas, and American white pelicans, white-faced ibis and Wilson's phalarope are associated with ponds and wetlands. Cassin's finch, Lewis' woodpecker, and red-naped sapsucker prefer forest habitat. Juniper woodlands and Douglas-fir stands within the Toy Mountain Group allotments provide substantial amounts of suitable habitat for these species.

Further consideration is given to avian species afforded special management emphasis under the Migratory Bird Treaty Act (MBTA). As of 2010, under a signed Memorandum of Understanding with the USFWS, the BLM has a responsibility to, "as practical, protect, restore, and conserve habitat of migratory birds, addressing the responsibilities in Executive Order 13186" (USDI, 2010). The Toy Mountain Group allotments may provide foraging and nesting habitat for up to 177 additional species of migratory birds (Appendix F).

The North American Bird Conservation Initiative (NABCI) is a comprehensive instrument by which government agencies, such as the BLM, and private partners can promote and achieve integrated continental bird conservation as specified by Executive Order 13186 and the BLM-USFWS

Memorandum of Understanding. One product of the NABCI is the designation of Bird Conservation Regions (BCR) across North America. BCRs are ecologically distinct regions with similar avian communities, habitats, and management concerns developed as the primary unit within which issues are resolved, sustainable habitats are designed, and priority projects are initiated (NABCI-US, 2000). Within BCRs, regional partnerships, or joint ventures, identify Bird Habitat Conservation Areas (BHCA) in which to deliver and implement state or local bird conservation plans.

On a regional scale, the Toy Mountain Group allotments fall within the Great Basin BCR. In addition, the Toy Mountain Group allotments are within the more localized Owyhee and Snake River Birds of Prey BHCAs. The Owyhee and Snake River Birds of Prey BHCAs have been identified by the Intermountain West Joint Venture as areas of statewide importance for priority bird species where the opportunity for effective conservation activities exists. Within the Great Basin BCR and the Owyhee and Snake River Birds of Prey BHCAs, partner agencies and organizations have compiled a list of continentally important bird species based on a variety of bird initiatives and plans (Appendix F).

The nesting requirements of many migratory birds are fulfilled within the Toy Mountain Group allotments from late April to mid-July and/or during spring and fall migrations. While some migratory bird species use a wide variety of habitats, others are more specialized. Several species can successfully nest and raise multiple broods during a single breeding season if suitable conditions exist. Bird species that utilize woodlands have benefitted from the recent expansion of juniper across thousands of acres of the Owyhee Uplands. Nevertheless, no bird species are considered juniper-obligates, and generally, as juniper densities increase, species diversity decreases (Miller R. F., Bates, Svejcar, Pierson, & Eddleman, 2005). Grasslands and shrub steppe provide nesting and foraging habitat for the majority of migratory bird species within the Toy Mountain Group allotments. Most of these ground nesting or shrub-dependent species rely on the vegetative structure and cover found in these habitat types for successful breeding. Among birds, grassland and shrubland species are declining faster than any other group of species in North America (Dobkin & Sauder, 2004) (Brennan & Kuvlesky, Jr., 2005).

Riparian habitats support the most diverse migratory bird communities in the arid and semiarid portions of the Intermountain West (Knopf, Johnson, Rich, & Samson, 1988) (Dobkin, 1994) (Dobkin, 1998). In addition, healthy riparian areas sustain high densities of breeding migratory birds (Mosconi & Hutto, 1982). In Idaho, 60 percent of migratory landbirds are associated with riparian habitats (IDFG, 1992), and one of the main reasons for the decline of migratory landbirds is the loss of riparian habitat (DeSante & George, 1994).

An assortment of raptor species occur or potentially occur within the Toy Mountain Group allotments (Appendix F). The juniper woodlands, rock outcrops, and shrub steppe located within the Toy Mountain Group allotments provide nesting and foraging substrate for many of these species. Generally, raptors return to areas in which they have nested in the past, often using the same nesting territories. Nesting activities may be initiated in mid-February to late April, depending upon species. Nest occupation continues until chicks are fledged, which usually occurs from early June to mid-August. Raptor nesting is expected to occur in suitable habitats within the Toy Mountain Group allotments.

Eagle species are afforded additional protection under the BGEPA. Bald eagles have been documented along the Snake River near the Toy Mountain Group allotments during migration and the winter months. However, bald eagle breeding within the Toy Mountain Group allotments is highly improbable because of the lack of open water and nesting trees.

Golden eagles, prairie falcons, ferruginous hawks, and Swainson's hawks prefer open shrub steppe, sagebrush, and grassland habitats. Golden eagles, ferruginous hawks, and prairie falcons nest on cliffs and rocky outcrops throughout southwest Idaho. All three species breed and forage in and around the Toy

Mountain Group allotments. Documented nest sites and potential nesting habitat for these species is abundant in the uplands on rocky outcrops and cliffs and nearby canyons (i.e., Snake River, Castle Creek, and Rock Creek). Golden eagles, prairie falcons, ferruginous hawks, and Swainson's hawks primarily prey on medium to small-sized mammals, especially jackrabbits, ground squirrels, rodents, and voles.

The *Accipiter* species (northern goshawk, Cooper's hawk, and sharp-shinned hawk) and most owls prefer mixed open forest to more dense forest. In semiarid areas, these species often focus hunting efforts in riparian areas due to the abundance of prey found there. Juniper woodlands and Douglas-fir forest also provide suitable foraging habitat. The expanding juniper woodlands in some of the Toy Mountain Group allotments provide suitable foraging habitat for these species. Accipiters primarily prey upon birds but also will take small mammals.

Several species of owls that potentially occur within the Toy Mountain allotments include great horned owl, long-eared owl, northern saw-whet owl, and western screech owl; these species generally are associated with greater tree cover found in woodlands, forest, and riparian areas. Flammulated owls prefer dense forest and probably occupy Douglas-fir stands and woodland areas where juniper has expanded and become thicker.

A number of raptor species prefer open woodland or shrub steppe to dense forest. American kestrel, northern harrier, red-tailed hawk, short-eared owl, and western burrowing owl usually are found in more open areas such as sagebrush steppe, grasslands, meadows, or open riparian areas, and prey on a wide variety of small mammals, reptiles, birds, and insects. Northern harriers and short-eared owls are ground nesters and need adequate cover for suitable nest sites. Burrowing owls nest in burrows dug by other animals, usually badgers, and they hunt in grasslands and sagebrush steppe areas. Expansion of juniper woodlands probably has restricted the distribution of these open habitat species within parts of the Toy Mountain Group allotments.

Big Game and other Mammals (including Special Status Species)

Several special status mammal species have been documented or have the potential to occur within the Toy Mountain allotments (Appendix F). The Toy Mountain Group allotments have long supported populations of a wide variety of big game species. California bighorn sheep inhabit the rugged and broken country in and around Castle Creek canyon and nearby Browns Creek year-round (Map WDLF-5). In recent years, the local population (Owyhee Front population management unit [PMU]) of approximately 75 California bighorn sheep has remained relatively stable (IDFG, 2010a). Bighorn sheep habitat in this PMU is uncharacteristic of other California bighorn sheep habitat in Owyhee County because it generally lacks deep-canyon topography. Although ewes and lambs occupy the most rugged canyon terrain, rams select areas with abundant forage, little human disturbance, and atypical escape terrain such as low rock outcrops or steep slopes (IDFG, 2010a). Bighorn sheep in the Owyhee Front PMU make relatively long-distance movements between isolated patches of critical habitat. The majority of the Owyhee Front PMU is used as corridors for seasonal movements. Bands of rams travel 5 to 10 miles from summer pastures to get to ewes during the fall rut (IDFG, 2010a). The overall management goal for the Owyhee Front PMU is to maintain or increase the current population; IDFG estimates the PMU is capable of supporting up to 880 sheep (IDFG, 2010a).

Rocky Mountain elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and pronghorn (*Antilocapra americana*) use portions of the area year-long. However, some areas are used specifically as seasonal ranges (i.e., spring, summer, fall, and winter). Elk and mule deer are common year-round in the uplands and canyonlands of the higher elevation areas (i.e., south and west of the crest of the Owyhee Front). Pronghorn occur year-round in lower elevation areas of the Toy Mountain Group allotments on the Snake River Plain and seasonally move to open areas at higher elevations from spring through fall.

The Toy Mountain allotments are located within the IDFG game management unit (GMU) 40. Current population data for elk and mule deer are lacking because surveys have not been conducted within GMU 40 for several decades (IDFG, 2000a) (IDFG, 2000b). Nevertheless, IDFG estimated the 2002 population at approximately 450 elk within GMUs 40 and 42; population objectives within GMU 40 are 160 to 240 elk (IDFG, 2010b). IDFG does not have any current population estimates for mule deer in GMU 40; managers have identified population information within the GMU as a primary data need in the future (IDFG, 2010c). The IDFG objective for mule deer within GMU 40 is to increase populations within these important herds (IDFG, 2010c). IDFG does not have any current population estimates for pronghorn in GMU 4; besides maintaining a variety of hunting opportunities and average horn lengths, IDFG has no explicit population objectives for pronghorn within GMU 40 (IDFG, 2010d).

While juniper provides hiding and thermal cover for elk and deer, juniper encroachment reduces forage and habitat diversity. Browse species important to deer, such as mountain big sagebrush, mountain mahogany, and bitterbrush, have decreased in juniper encroachment areas. Pronghorn probably used more of the higher elevation areas of the Toy Mountain Group allotments when vegetation consisted mainly of open grassland and shrubs; however, pronghorn use has currently been reduced due to the increase in juniper woodlands.

Special status bat species occurring or potentially occurring within the Toy Mountain Group allotments include fringed myotis, spotted bat, and Townsend's big-eared bat. Although these species have been detected in the general area around the allotments, research conducted in the juniper woodlands in the Owyhee Uplands suggest that bat populations are not numerous and species diversity is low (Perkins & Peterson, 1997). Quality day-roosting habitat (particularly caves and large, mature, live cottonwoods and snags) appears to be a limiting factor for bats in the area. Although abundant, the cliffs, rock outcrops, and seral junipers found the portions of the allotments only provide marginal roosting habitat (Perkins & Peterson, 1997). Because the effects of livestock grazing on bats are not well-known and old growth junipers would remain the most abundant day roost substrates in the area, effects to bats are expected to be negligible and will not be discussed further.

Pygmy rabbits have the potential to occur within the Toy Mountain Group allotments. The pygmy rabbit is a sagebrush-obligate species that requires tall stands of big sagebrush on deep, friable soils where they dig extensive burrow systems. These dense sagebrush habitats provide food and shelter throughout the year. During winter, pygmy rabbits are almost entirely dependent on sagebrush for food. Fragmentation of sagebrush habitats poses a threat to this species by isolating disjunct populations, increasing susceptibility to localized threats, and reducing gene flow among populations. Habitat loss and fragmentation due to conversion of sagebrush to agriculture, wildfire, invasive plants, and conifer encroachment have been identified as some of the primary threats to pygmy rabbit populations (IDFG, 2006b). A model created by Idaho BLM in 2009 suggests that the majority of the Toy Mountain Group allotments have a moderate likelihood of core habitat presence (USDI BLM, unpublished data). Although dense, big sagebrush stands are common within the Toy Mountain Group allotments; deep, friable soils are more limited and patchily distributed. Because pygmy rabbits have been documented in the Owyhee Uplands approximately 5 miles southwest of the Toy Mountain Group allotments, some pygmy rabbits may occur in areas with suitable shrub steppe habitat.

A variety of other medium to small-sized mammals such as jackrabbits, cottontails, ground squirrels, rodents, and voles occur within the Toy Mountain Group allotments. Many of these species prefer open habitats including sagebrush steppe, salt desert scrub, grasslands, meadows, and other productive bottomlands. As well as being major constituents to biodiversity, small mammals serve as predators, prey, seed dispersers, and grazers. An abundant and diverse small mammal community can be an indicator of a healthy and functioning ecosystem (Fricke, Kempema, & Powell, 2009).

Large predators that occur within the Toy Mountain Group allotments include bobcat (*Lynx rufus*), coyote (*Canis latrans*), and mountain lion (*Puma concolor*). These predators are quite secretive and elusive. Because of their secretive nature, predator densities are difficult to determine. However, predators are closely tied to their prey, and if prey numbers are low, predator numbers would reflect that. Because these species are relatively common and abundant habitat exists in the area, they will not be discussed further.

Beavers (*Castor canadensis*) are not as widespread throughout the area as they once were. Habitat for beavers in the Toy Mountain Group allotments has been affected by livestock use and encroachment of juniper. Loss of aspen, cottonwood, and willow trees has affected beaver by reducing suitable forage and material for building dams to create pond habitat. The loss of beavers throughout much of the area is suspected of leading to declines in spotted frog numbers.

Amphibians and Reptiles (including Special Status Species)

Two amphibians and three reptiles with special status have been documented or have the potential to occur within the Toy Mountain Group allotments (Appendix F). Woodhouse and western toads use a variety of habitats but prefer areas in proximity to water, including springs, streams, wetlands, and meadows. Loss and degradation of riparian-wetland habitats are the most serious threats to the maintenance of viable populations of these species. Mojave black-collared lizard, longnose snake, and western groundsnake prefer low elevation, xeric habitats with sandy, loose soils and nearby rocky microhabitats. Their preferred habitats occurs in the numerous rocky outcrops and sand washes that punctuate and traverse the lower elevation allotments on the Snake River Plain. Concentrated off-highway vehicle use of sand washes and degradation of native habitat due to invasive exotic vegetation (i.e., cheatgrass) may be threats to these species, particularly in the Owyhee Front (Munger, Barnett, Novak, & Ames, 2003), (Pope & Munger, 2003).

Because very little is known about amphibian (with the exception of spotted frogs) and reptile populations in the Toy Mountain allotments, individual species will not be discussed in detail further. Amphibian habitat in general and reptile habitat will be included in the broader context of upland and riparian habitat conditions.

Fisheries

Other fish species that occur or potentially occur within streams in the Toy Mountain Group allotments include smallmouth bass (*Micropterus dolomieu*), dace (*Rhinichthys* spp.), redband shiner (*Richardsonius batesi*), sculpin (*Cottus* spp.), mountain whitefish (*Prosopium williamsoni*), northern pikeminnow (*Ptychoccheilus oregonensis*), and suckers (*Catostomus* spp.). These species will not be discussed further, as fish habitat in general will be included in detailed discussions under redband trout.

Desired Conditions for Wildlife and Special Status Animal Species Habitat

The appropriate structure, function, and composition of native upland and riparian vegetation communities are necessary to ensure the proper functioning of ecological processes and continued diversity and productivity of plant species. Vegetation communities meeting these desired conditions provide habitats suitable for the maintenance of viable wildlife populations, including threatened and endangered, sensitive, and other special status species.

Wildlife habitats should be managed to maintain or enhance the condition, abundance, and structural stage and distribution of plant communities and special habitat features required to support a high diversity and desired populations of wildlife species (USDI BLM, 1999a). In addition, perennial stream and riparian areas should be improved or maintained to provide satisfactory conditions to support native

fish. Special status species and their habitats should be managed to increase or maintain populations at levels where their existence is no longer threatened and listing under the ESA is unnecessary. Grazing management practices should provide sufficient residual vegetation to improve, restore, or maintain the physical and biological conditions (e.g., hydrologic cycle, nutrient cycle, and energy flow) necessary to sustain wildlife habitats in properly functioning, structurally appropriate, and diverse native upland and riparian plant communities. Guiding land management objectives are set by the Owyhee Resource Management Plan (USDI BLM, 1999a) that states:

- **Wildlife habitats (WDLF 1):** Maintain or enhance the composition, structure, extent/juxtaposition, and connectivity of plant communities to support local wildlife populations. In addition, perennial/intermittent stream and riparian areas should be improved or maintained to provide satisfactory conditions to support native fish and amphibians.
- **Special Status Species (SPSS 1):** Manage special status species and their habitats to increase or maintain populations at levels where their existence is no longer threatened and there is no need for listing under the Endangered Species Act of 1973, as amended.
- **Fishery Habitat (FISH 1):** Improve and maintain perennial stream/riparian areas to attain satisfactory conditions to support native fish.

Idaho Standards for Rangeland Health and the Guides for Livestock Grazing Management (Appendix A) were approved in 1997. The eight standards and 20 guidelines are the primary tools for determining if rangeland health, condition, and trend are suitable on each allotment. Standard 8 (Threatened and Endangered Plants and Animals) of the Idaho Standards for Rangeland Health and the Guides for Livestock Grazing Management identifies:

- Habitats are suitable to maintain viable populations of threatened and endangered, sensitive, and other special status species.

Indicators used to assess the condition and quality of wildlife habitats include productivity and diversity of native plant and animal communities, site-appropriate age class and structural diversity of plant species, site-appropriate amount and distribution of ground cover (including litter), presence of deep-rooted, stabilizing riparian vegetation, and water quality (Appendix A).

3.1.6 Recreation and Visual Resources

The Toy Mountain Group allotments cover a large area within the Owyhee Field Office and lie within two separate Special Recreation Management Areas (SRMAs) and one Extensive Recreation Management Area (ERMA). The SRMAs include the Owyhee Front SRMA and the Silver City SRMA, and the ERMA is referred to as the Owyhee ERMA. SRMAs are designated for special or more intensive types of recreation management and where greater investments for recreation management are anticipated due to the intensity of use the area receives, while an ERMA is an area where recreation management is only one of several management objectives, and where a limited commitment of resources is required to provide extensive and unstructured types of recreation activities (USDI BLM, 1999a).

The Owyhee Front SRMA contains all or portions of the Red Mountain, Hart Creek, Browns Creek, West Castle, and Whitehorse/Antelope allotments; these allotments are located along the southeastern edge of the management area. This SRMA encompasses approximately 181,500 acres and is made up of the plains and low foothills of the northern front of the Owyhee Mountain Range. The Owyhee Front is recognized for quality motorized OHV opportunities due to its cool spring/fall weather conditions and dry soils, coupled with a diversity of terrain features. The terrain includes hundreds of miles of roads, trails, and interconnecting sand washes traversing gentle to rugged hills and ridgelines. The area is used by OHV enthusiasts year-round and for hunting in the fall. Mountain biking, horseback riding, hiking, sight-seeing, rock hounding, wild horse viewing, and camping all occur throughout the area as well.

The allotments within the Owyhee Front SRMA also lie within the Murphy Subregion Travel Management Area, as well as the designated motorized/mechanized competitive use area for the Owyhee Field Office. These areas contain roughly 850 miles of designated routes and are home to multiple motorcycle and mountain bike races, as well as running events and equestrian endurance rides that occur annually.

The Silver City SRMA contains all or portions of the Red Mountain, Boone Peak, Hart Creek, and Whitehorse/Antelope allotments, as well as the Quicksilver FFR, Stahle FFR, and Alder Creek FFR allotments. This SRMA extends from the historic mining town of Silver City downstream along Jordan Creek for roughly 8 miles. Thousands of visitors travel the road adjacent to Jordan Creek or over the top of New York Summit to visit Silver City's historic sites. Camping, fishing, hiking, OHV activity, and hunting are all popular recreational pursuits within this SRMA. Winter activities include snowmobiling and cross-country skiing. Recreational facilities within the SRMA include a small campground and several toilets, and a number of undeveloped sites along Jordan Creek.

The remainder of the allotments lies within the Owyhee ERMA. This ERMA contains approximately 1,006,700 acres extending from the Snake River south along the Oregon border to Nevada. The extreme diversity of landforms and vegetation within the ERMA create a wide range of natural settings in which to enjoy recreational opportunities. Recreation is widely dispersed and consists mostly of hunting, fishing, horseback riding, rock hounding, nature study, camping, OHV riding, mountain biking, sight-seeing, and hiking.

Off-highway motor vehicle (OHV) designations within Group 3 are limited to designated (areas within the Murphy Subregion travel planning area), and limited to existing roads and trails. The limited to existing designation will change within the next 5 years (roughly) to limited to designated, as all of Owyhee County is currently undergoing a travel management process as per the 2009 Omnibus Public Lands Management Act (OMA).

The Recreation Opportunity Spectrum (ROS) classification is used to characterize the type of recreational opportunity settings, activities, and experience opportunities that can be expected in different areas of public land. The Toy Mountain Group allotments contain multiple settings for recreationists, ranging from Primitive to Roaded Natural, Semi-Primitive Motorized, and Semi-Primitive Non-Motorized classifications.

Primitive areas are those characterized by an essentially unmodified natural environment. The concentration of users is very low and the evidence of other users is minimal. The area is managed essentially to be free from evidence of human-induced facilities for comfort or convenience. Only facilities essential for resource protection are used. Motorized use within the area is not permitted (USDI BLM, 1999a).

Roaded Natural areas are those characterized by a generally natural environment with only moderate evidence of the sights and sounds of humans. Resource modifications and utilization practices are evident but harmonize with the natural environment (USDI BLM, 1999a).

Semi-Primitive Motorized and Semi-Primitive Non-Motorized areas are those characterized by a primarily unmodified natural environment. There is evidence of other users in the area; however, management actions encourage limited contacts between users. The Semi-Primitive Motorized classification permits motorized uses within the area, and Semi-Primitive Non-Motorized does not.

Overall, recreation is abundant and diverse throughout the Toy Mountain Group allotments. The highest use occurs in the northern portion of the Toy Mountain Group within the Owyhee Front SRMA, as well as within the Silver City SRMA. These areas receive a very high amount of OHV riding, as well as hunting, horseback riding, mountain biking, and wildlife viewing.

The visual resource management classes within the Toy Mountain Group allotments consist of VRM class II, III, and IV, with VRM IV making up the majority of the allotments. Allotments containing VRM class II include:

- Boone Peak (roughly 90 percent)
- Bridge Creek (roughly 30 percent)
- Quicksilver FFR [pasture 1 (100 percent), pasture 2 (50 percent)]

Allotments containing VRM management class III include:

- Red Mountain (southern portion)
- Hart Creek – Cat Pasture (roughly 70 percent)
- Alder Creek FFR (50 percent)
- Box T and Toy allotments (100 percent)
- Meadow Creek and Munro FFRs (100 percent)

The remaining areas/allotments are categorized as class IV VRM.

The VRM Class II objective is to retain the existing character of the landscape. The level of change to the characteristic of the landscape would be low. Management activities may be seen but would not attract the attention of the casual observer. Except within wilderness areas, very limited construction of new rangeland facilities and vegetation treatment projects is permitted.

The VRM class III objective is to partially retain the existing character of the landscape and the level of change to the characteristic of the landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features or the characteristic landscape. This classification occurs where the amount of use is relatively high and scenic quality is generally good. Maintenance, construction, and reconstruction of rangeland facilities, roads, and vegetation treatment projects are permitted. In this classification emphasis is placed on construction techniques that will reduce the projects visual impacts to the natural landscape.

The objective for VRM class IV is to provide for management activities which would require major modifications to the existing character of the landscape. These activities may dominate the view and be the focus of attention. However, every attempt should be made to minimize impacts with careful location and minimal disturbances (USDI BLM, 1999a).

3.1.7 Areas of Critical Environmental Concern (ACEC)

The applicable ORMP objective for management within Areas of Critical Environmental Concern (ACECs) identifies that BLM will retain existing and designate new ACECs where relevance and importance criteria are met and where special management is needed to protect the values identified. The Boone Peak allotment includes one ACEC, Cinnabar Mountain.

The Cinnabar Mountain ACEC/RNA was designated in 1999 by the Owyhee Resource Management Plan (ORMP) (USDI BLM, 1999a). The 277-acre Cinnabar Mountain ACEC was established in the 1999 Owyhee Field Office Resource Management Plan (RMP) to represent reasonably undisturbed high-elevation mountain mahogany (*Cercocarpus ledifolius*), Douglas-fir (*Pseudotsuga menziesii*), and

subalpine fir (*Abies lasiocarpa*) communities, as well as a low sagebrush/bluebunch wheatgrass (*Agropyron spicatum*) community on a wind-swept ridge (portion of Hayden Peak). Extensive historical as well as current use of the Owyhee Mountains has resulted in few such communities in excellent condition. Therefore, the Cinnabar Mountain ACEC serves as a valuable rangeland reference area. The ORMP notes that because of its elevation, the ACEC has high scenic values. The ORMP mentions several special status and other wildlife species, including sage-grouse.

Three ecological sites are mapped within the Cinnabar Mountain ACEC, much as described in the ORMP:

- Mahogany Savanna 16-22" mountain mahogany-mountain snowberry/ Idaho fescue-needlegrass
- Douglas-fir snowberry 22+"
- Mountain ridge 14-18" low sagebrush/Idaho fescue.

Two site visits were conducted in 2006 and 2013. The condition of the vegetation within the ACEC was reasonably close to reference conditions in 2013 (Corbin, 2013). The mahogany stands were fairly extensive, appeared healthy, and were made up of individuals of several age classes, although mostly mature. Some browse use was apparent, but nowhere were plants particularly hedged. Wind-sheared plants occur on exposed ridges. Some plants had set fruit, although not a high percentage. In some places, cattle had been congregating under large mahogany plants, disturbing the soil and understory vegetation. Inclusions of mountain big sagebrush or rock spiraea occur within mapped mountain mahogany stands.

Management of the Cinnabar Mountain ACEC appears more or less compatible with the values and resources for which the ACEC was designated, particularly for shrubs and trees. Mountain mahogany, Douglas-fir, subalpine fir, and low sagebrush stands appear healthy.

Understory vegetation (perennial grasses and forbs, and biological soil crusts) are being impacted by cattle grazing and trampling in the less-rocky areas. Weeds are mostly localized rather than widespread. Bulbous bluegrass is scattered throughout parts of the ACEC, and other weeds are limited to near the roads and radio tower, with very low cover and abundance. Recreational vehicle traffic (primarily motorcycles, ATVs, UTVs, and probably some pickup trucks) regularly use the rough two-tracks at the edge of the ACEC and within it up to the radio tower. Off-road travel appeared minimal, with a few stray vehicle tracks on the saddle at the north end of the ACEC and around the radio tower on Hayden Peak. The area within the protective fence at the radio tower is devoid of vegetation (less than ¼-acre).

In accordance with the 1999 ORMP (USDI BLM, 1999a), the Cinnabar Mountain RNA/ACEC is designated as being:

- An avoidance area for granting Rights-of-Way actions for surface and subsurface development;
- Closed to fluid minerals, mineral materials, and a rating of Open (O) for Locatable Minerals;
- Prohibited to water developments (with exception to springs), livestock salting, pasture fencing, juniper/vegetation treatment projects, and wildfire suppression activities; and,
- Restrictive for other multiple use activities associated with developing springs, livestock grazing, enclosure fences, and fire rehabilitation actions.

3.1.8 Social and Economic Values

Economic profiles

This socioeconomic analysis will focus primarily on Owyhee County, Idaho, where all of the Toy Mountain Group allotments are located, but as some of the livestock operators who own the cattle

maintain base ranches in Jordan Valley, Oregon (Malheur County), this county will also be included in the analysis.

Owyhee County is the second-largest county in the state and covers 7,639 square miles. The population in Owyhee County in 2010 was 11,389, an increase of 7 percent from the year 2000, compared to an 18 percent increase throughout the state of Idaho over that same time period. The population density is only 1.5 people per square mile, and most of the county residents enjoy a largely rural lifestyle. Residents of the Treasure Valley come to the public lands to recreate on weekends and during hunting and fishing seasons. In 2010, the median age in the county was 35.3 years, almost three years older than the median age in 2000 and close to the median age of 36.3 for the entire state. Almost one-third of county residents are under the age of 18 and more than 20 percent of residents are age 45 to 64. The population in the baby boomer generation increased almost 26 percent from 2000 to 2010. Southwest Idaho is projected to grow by more than 95,000 people by the year 2020, and 77,000 of these people will live in Ada or Canyon Counties (Gardner & Zelus, 2009).

Economic profiles

Unemployment in Owyhee County in 2010 was 11 percent, compared to 8.8 percent in Idaho and 9.6 percent nationwide in the same year. Incomes are lower in Owyhee County than in Idaho, possibly due to employment primarily in lower-paying sectors like agriculture and social services. In 2010, the per capita income for Owyhee County was \$17,373, with a median household income of \$33,441; per capita income for the state was \$22,518 and median household income was \$46,423 (U.S. Census Bureau, 2012). More than 20 percent of people in Owyhee County live below the poverty level, which is a higher rate than Idaho's poverty rate. Table SOCE-1 shows the unemployment rate, per capita income, median household income, and poverty rate of Owyhee and Malheur counties.

Table SOCE-1: Economic statistics for populations in Owyhee and Malheur counties

Location	Unemployment rate	Per capita income	Median household income (2010 dollars)	All people below poverty rate
Owyhee County, ID	11%	\$17,373	\$33,441	22.2%
Malheur County, OR	10.3%	\$16,335	\$39,144	22.7%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Agriculture (including livestock ranching), natural resource management, education and social services are the primary sectors for employment in Owyhee and Malheur counties, although manufacturing and retail trades also employ many residents in the counties (Table SOCE-2). Malheur County in southeastern Oregon covers 9,887 square miles and is 94 percent rangeland, two-thirds of which are managed by the BLM (Malheur County, Ore., 2012). Population density was 3.2 persons per square mile in 2010. Although education, health care and social services together employ almost one-fourth of the county's residents (U.S. Census Bureau, 2011), irrigated fields in the northeast corner of the county allow for intensive and diversified farming, and residents of the Treasure Valley in Oregon and Idaho support businesses connected to hunting, fishing, golfing, camping, hiking, and water-related activities.

Table SOCE-2: County employment by industry (2006-2010 average)

Industry	Owyhee County, Idaho	Malheur County, Oregon	United States
Civilian employed population 16 years and over	4,448	11,487	141,833,331

Industry	Owyhee County, Idaho	Malheur County, Oregon	United States
Agriculture, forestry, fishing and hunting, and mining	19.4%	12.4%	1.9%
Construction	12.6%	7.1%	7.1%
Manufacturing	9.0%	10.0%	11.0%
Wholesale trade	1.6%	4.4%	3.1%
Retail trade	8.3%	10.7%	11.5%
Transportation and warehousing, and utilities	6.3%	3.4%	5.1%
Information	1.0%	1.3%	2.4%
Finance and insurance, and real estate and rental and leasing	4.2%	4.1%	7.0%
Professional, scientific, and management, and administrative and waste management services	2.9%	4.2%	10.4%
Educational services, and health care and social assistance	19.7%	23.1%	22.1%
Arts, entertainment, and recreation, and accommodation and food services	5.7%	7.6%	8.9%
Other services, except public administration	3.3%	3.8%	4.9%
Public administration	5.9%	7.9%	4.8%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

Economic Contribution of Livestock Grazing

The federal government manages 78 percent of the total land in Owyhee County; the BLM manages 75.9 percent of all federal land in the county. Ninety-three percent of the total federal land in the county is managed for commodity production (timber harvest, crop and livestock production, and mining) and 7 percent is managed primarily for natural, cultural, and recreational activities (EPS-HDT, 2012).

Table SOCE-3 shows the industry classification (based on the North American Industry Classification System (NAICS)) for farms located in Owyhee and Malheur counties, as well as the nation as a whole in 2007. Individual farms may engage in various types of agriculture (both crops and livestock), but these classifications provide insight into the likely primary agriculture activity for the farms surveyed in the 2007 USDA Census of Agriculture. As shown in the table, the proportion of farms classified as beef cattle ranching and farming operations substantially exceeds the national average.

Table SOCE-3a and b

Table SOCE-3a: Number of Farms by Type, 2007

Farm Type	Owyhee County, ID	Malheur County, OR	County Region	U.S.
All Farms	620	1,250	1,870	2,204,792
Oilseed & Grain Farming	40	74	114	338,237
Vegetable & Melon Farming	10	57	67	40,589
Fruit & Nut Tree Farming	4	8	12	98,281

Farm Type	Owyhee County, ID	Malheur County, OR	County Region	U.S.
Greenhouse, Nursery, etc.	4	8	12	54,889
Other Crop Farming	185	388	573	519,893
Beef Cattle Ranch. & Farm.	247	492	739	656,475
Cattle Feedlots	8	34	42	31,065
Dairy Cattle & Milk Prod.	23	35	58	57,318
Hog & Pig Farming	4	10	14	30,546
Poultry & Egg Production	6	4	10	64,570
Sheep & Goat Farming	30	40	70	67,254
Animal Aquaculture & Other Animal Prod.	59	100	159	245,675

Table SOCE-3b: Percent of each farm in each county, by type, 2007

Percent of Total	Owyhee County, ID	Malheur County, OR	County Region	U.S.
Oilseed & Grain Farming	6.5%	5.9%	6.1%	15.3%
Vegetable & Melon Farming	1.6%	4.6%	3.6%	1.8%
Fruit & Nut Tree Farming	0.6%	0.6%	0.6%	4.5%
Greenhouse, Nursery, etc.	0.6%	0.6%	0.6%	2.5%
Other Crop Farming	29.8%	31.0%	30.6%	23.6%
Beef Cattle Ranch. & Farm.	39.8%	39.4%	39.5%	29.8%
Cattle Feedlots	1.3%	2.7%	2.2%	1.4%
Dairy Cattle & Milk Prod.	3.7%	2.8%	3.1%	2.6%
Hog & Pig Farming	0.6%	0.8%	0.7%	1.4%
Poultry & Egg Production	1.0%	0.3%	0.5%	2.9%
Sheep & Goat Farming	4.8%	3.2%	3.7%	3.1%
Aquaculture & Other Prod.	9.5%	8.0%	8.5%	11.1%

Source: (EPS-HDT, 2012)

Table SOCE-4 shows county-level economic information for 2011 based on data from the Bureau of Economic Analysis. While total earnings in Owyhee County are substantially less than those of Malheur County, farm earnings in Owyhee County are more than triple those of Malheur County. More than half of the earnings generated in Owyhee County come from farming, compared to just under 6 percent in Malheur County.

In terms of employment, the farming Section accounts for more than one-quarter of the jobs in Owyhee County, more than 10 percent of the jobs in Malheur County.

In all three counties, more than half of the cash receipts generated by farms come from livestock and products.

Table SOCE-4: Farm Earnings, Employment, and Cash Receipts (2011)

	Owyhee Co. (ID)	Malheur Co. (OR)
Total earnings by place of work (million dollars)¹	\$198.5	\$578.8
Farm earnings (million dollars)	\$107.3	\$33.3
Farm earnings (%)	54.0%	5.7%
Total employment²	4,262	17,235
Farm employment	1,123	2,098
Farm employment (%)	26.3%	12.2%
Farm cash receipts and other income (million dollars)³	\$345.3	\$374.5
Livestock and products (%)	58.6%	59.2%
Crops (%)	37.6%	36.1%
Other (%)	3.8%	4.7%

Source:

1 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA05: Personal income by major source and earnings by NAICS industry.

2 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA25N: Total full-time and part-time employment by NAICS industry.

3 Bureau of Economic Analysis, Regional Economic Information System (BEA-REIS). 2012. Table CA45 Farm income and expenses.

Data from the Bureau of Labor Statistics (BLS) indicate that the average annual income of individuals employed in occupations related to animal production earned approximately \$36,047 and \$28,987 in Owyhee and Malheur counties, respectively, in 2011.

In accordance with the Owyhee Resource Management Plan (USDI BLM, 1999a), livestock grazing is available within the 20 Toy Mountain Group allotments. Additionally, the ORMP identified the active authorized use for livestock within the ORMP planning area upon implementation of the plan. The plan further identified that authorized active use would be adjusted through the life of the plan based on monitoring and assessment to determine future stocking levels. Stocking levels necessary to meet objectives¹⁵¹ were projected to be reduced from 135,116 upon implementation of the ORMP in 1999 to 112,647 AUMs in 2004 and 105,899 AUMs in 2019. These projected levels of authorized active use compare to an average actual use of 96,676 AUMs during the years 1988 through 1997.

In 2010, livestock cash receipts in the state of Idaho totaled \$1.2 billion, an increase of 26 percent over the previous year (USDA NASS, 2011). According to the 2007 USDA Census of Agriculture, the most recent year the census was taken, (USDA NASS, 2009) 134,732 cattle and calves were sold in Owyhee County that year, which brought almost \$67 million to the county that year, an average of \$497 per head. In the state of Idaho, 1.8 million cattle and calves were sold that same year, totaling more than \$1.3 billion, an average of \$756 per head. However, most of the grazing operations with livestock on the Owyhee River area allotments are family-owned ranches based in Jordan Valley, Oregon. Thus, although the livestock graze in Idaho, income from the sales of those livestock goes to the counties in which the livestock operations are based. In 2007, sales of 203,743 cattle and calves in Malheur County totaled

¹⁵¹ The ORMP objective for livestock grazing management is to provide for a sustained level of livestock use compatible with meeting other resource management objectives. In addition, the objective is to resolve issues associated with livestock grazing identified in the allotment management summary (Appendix LVST-1 of the ORMP).

\$179 million (USDA NASS, 2009). Livestock operation owners may still do business in Idaho, especially while the animals are actively grazing on the allotments, by purchasing supplies, equipment, and gasoline for vehicles, as well as visiting local establishments for food and entertainment. Research completed in 1999 estimated that livestock grazing contributed \$66.94/AUM to the Owyhee County economy (Darden, Harris, Rimbey, & Harp, 1999): \$46.85/AUM as a direct impact to ranches and \$16.22/AUM as indirect/induced effects to other sectors in the local economy. Indirect and induced economic effects to the regional economy include supply purchases (such as hay, equipment, etc.) and from the labor income expenditures by ranch employees and by employees of suppliers. These numbers provide a means of comparing effects to the local economy from changes in livestock grazing management, but actual economic impacts may vary by ranch and county.

The BLM collects annual grazing fees from the operators based on the number of AUMs they are permitted. An AUM represents the amount of dry forage required to sustain one cow and her calf, one steer, one horse, five sheep, or five goats for one month. The ORMP provides 135,116 active permitted AUMs for all of the allotments in the Owyhee Resource Area. Section 2.2.1 shows the active use, suspension, and permitted use AUMs for each of the Toy Mountain Group allotments under the current situation. As defined by the Taylor Grazing Act of 1934, active use is the current authorized use, which includes livestock grazing. Suspension is the temporary withholding of active use, and permitted use is the forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease. At the current rate of \$1.35 per AUM, these allotments can generate \$22,152 per year from active-use AUMs (based on the number of AUMs authorized in Alternative 1). The BLM distributes 50 percent of the grazing revenues to range betterment projects, 37.5 percent remains in the U.S. Treasury, and 12.5 percent is returned to the state (43 USC Chapter 8A, 1934). In addition, the BLM contributes payments in lieu of taxes (PILT), which totaled more than \$9.5 million in Owyhee County from 2003 to 2012, for an average of about \$956,000 per year¹⁵².

Non-market values of ranching

Most environmental goods and services (e.g., clean air and water, fish and wildlife habitat, recreational and aesthetic values) are not traded in markets, so it is difficult to place a monetary value on the protection or degradation of natural resources that provide these goods and services. In many cases, a method called hedonic pricing can attempt to estimate a value of the goods and services an ecosystem provides by examining the amount of money that people would be willing to pay when the characteristics of the service change. For example, the value of the ecosystem services that support recreational activities (e.g., clean air and water that supports habitat for fish and wildlife, which in turn provides hunting, fishing, and wildlife watching opportunities) can be estimated by examining average expenditures for travel, equipment, and supplies for these recreational activities in an area (see Tables SOCE-9 and 10 below). People may spend less time and money on recreational activities in areas where the natural resources have become degraded. The Toy Mountain Group allotments provide opportunities for recreation such as ORV use, fishing, hunting, boating, camping, and wildlife-watching (see Recreation, Visual Resource, ACEC, Wilderness and Wild and Scenic Rivers, and Lands with Wilderness Characteristics Sections in this EA); however, degraded conditions caused by fires and livestock grazing-related activities can reduce wildlife habitat, muddy streams and rivers, and diminish scenic values, all of which can lead to less recreation and thus less money spent in the counties adjacent to these allotments.

Other intangible values associated with ecosystems services include social values of natural resource use – the sense of community cohesiveness and belonging that comes from participating in recreational activities, as well as farming and ranching. Degraded conditions, as mentioned above and in the resource

¹⁵² Based on BLM data retrieved at http://www.doi.gov/pilt/county-payments.cfm?term=county&state_code=ID&fiscal_yr=2012

impact analysis Sections of this EA, lessen the quality of the land and forage available for growing crops or feeding livestock, which can also have economic impacts on the producers of these goods in the counties adjacent to the Toy Mountain Group allotments. Ecosystems services also have value beyond providing for the uses discussed in this EA. As noted in (Besser, et al., 2012), providing for healthy, functioning ecosystems can contribute to a greater resilience to extreme events like fires and storms, as well as the long-term impacts of climate change.

Rangeland Ecosystem Goods and Services

Healthy rangeland ecosystems can provide multiple goods and services that can increase the economic, social, and cultural well-being of individuals and communities. To the degree that rangeland resources are degraded, an opportunity exists—through restoration of ecosystem health—to obtain these goods and services at a higher and more productive level.

According to participants in the Sustainable Rangelands Roundtable, rangeland ecosystem goods and services are divided into three main categories: Biological, hydrological/atmospheric, and miscellaneous.¹⁵³ The Roundtable identified a list of goods and services available from healthy rangelands, some of which are shown. Additional goods and services not identified by the Roundtable have been added to their list (see table SOCE-5) to show other potential gains within the Owyhee region. This list should not be considered as exhaustive. There may be even more potential goods and services that could be provided in greater amounts by an increase in rangeland health in the area.

Table SOCE-5: Rangeland ecosystems services

Biological	Hydrological/Atmospheric	Miscellaneous
Domestic Livestock Production	Clean Drinking Water	Scenic Views
Other Food for Human Consumption	Water for Downstream Economic Uses	Cultural or Spiritual Resources
Forage for Livestock	Floods for Channel and Riparian Area Rejuvenation	Historical/Archeological Sites
Fiber	Flood Mitigation	Recreation and Tourism Sites
Biofuels	Water Bodies for Recreation/Tourism	
Wildlife Habitat Benefits (Fishing, Hunting, Viewing, Existence Value, etc.)	Minimization of Soil Erosion and Downwind/Downstream Soil Deposition	
Potential Biochemicals	Contribution to Clean, Fresh Air	
Genetic Material	Carbon Sequestration	

¹⁵³ Source: http://sustainableangelands.org/pdf/Ecosystem_Goods_Services.pdf

Some of the potential benefits of increased rangeland health would be realized by individuals who live far away from the Owyhee region. Because streams flowing through the area eventually contribute to the Snake and Columbia River systems, any extra sediment that leaves the area could result in lower hydrologic capacity, lower resistance to flooding, and decreased capacity for boat traffic on the Snake and Columbia rivers. In addition, stream-bottom sediment deposition decreases success rates for spawning fish species, possibly contributing to extended protection and expensive habitat-loss mitigation for salmon and other fish species. While these benefits might not be directly enjoyed by members of the Owyhee community, their value to society as a whole needs to be accounted for. An example of a “downwind” good or service is enhanced carbon sequestration potential, the benefits of which accrue to the entire global community and all earth ecosystems. Although these benefits are not focused on the Owyhee region, their value to the world as a whole must be weighed in the process of evaluating the relative benefits and costs of changes in range allotment permits and management decisions.

In 2011, researchers at the University of Nevada, Reno (UNR) prepared a preliminary draft of a flow-model for economic analysis for land management decision-making in the Intermountain West¹⁵⁴. In conjunction with this project, the researchers assembled an annotated bibliography of existing studies on the value of ecosystem services provided by rangeland and other land types in the western United States. Table SOCE-6 shows a list of the ecosystem goods services included in that bibliography. For each ecosystem good or service in the list, the table discloses:

- a. Whether an impact is expected to occur under any of the alternatives under consideration within this planning process;
- b. Whether any anticipated impacts are expected to be measureable;
- c. Whether the research included in the bibliography has been able to assign a monetary value to impacts to the ecosystem good or service in question; and
- d. Additional resources or data sources used in evaluating the good or service for this EIS.

The UNR document also outlines the conditions under which it would be reasonable to use the studies it cites to estimate the monetary value of the goods and services listed.

Table SOCE-6: Rangeland ecosystem goods and services and whether there are potential impacts from grazing and potential values of the services

Ecosystem Goods and Services listed in the University of Nevada, Reno's Annotated Bibliography	Is this resource expected to be affected under one or more of the alternatives being considered?	Is it expected to be affected in a manner and/or to a degree that can be measured?	Has research found a way to assign a monetary value to impacts to this resource?	Additional source(s) of documentation on this resource and its value and/or additional information
Ranch Incomes	Yes	Yes	Yes	BLM Value of Change in AUMs Calculator
Amenity Value of Ranching Lifestyle	Yes	No	Yes	
Recreation	No	No	Yes	
Wildfires	Maybe	?	Yes	

¹⁵⁴ *Economic Flow-Model for Western Rangelands: Annotated Bibliography and Additional Resources*, June 2011, University of Nevada, Reno, is available from the Owyhee Field Office project record upon request.

Ecosystem Goods and Services listed in the University of Nevada, Reno's Annotated Bibliography	Is this resource expected to be affected under one or more of the alternatives being considered?	Is it expected to be affected in a manner and/or to a degree that can be measured?	Has research found a way to assign a monetary value to impacts to this resource?	Additional source(s) of documentation on this resource and its value and/or additional information
Erosion and Hydrology	Maybe	No	Yes	FS WEPP and WEPS water and wind erosions models
Carbon Sequestration	Yes	No	Yes	The Chicago Climate Exchange carbon markets are not currently functional. If and when it becomes functional again, the market value of carbon will serve as a type of measure of the economic value of carbon sequestration. It is important to note that the true value of carbon sequestration is found in reduced future impacts from climate change. Those expected impacts can be estimated but are highly uncertain.
Wild Horses (under Miscellaneous)	Maybe	No	Yes	The study cited shows that additional wild horses beyond the target level cause economic losses due to reduced forage for livestock and wildlife.

Economists regularly quantify the value of ecosystem goods and services in dollar terms. Techniques used to estimate the dollar value of these benefits include:

- Revealed Preference Methods
 - Hedonic Pricing
 - The Travel Cost Method
- Expressed Preference Methods
 - Contingent Valuation
 - Welfare Measures
- Replacement Cost Method

- Dose-Response Methods
- Opportunity Cost Calculation

Revealed preference methods of valuation estimate proxy market prices based on the activities and choices made by actual people:

- In the hedonic pricing method of assessing value, the analyst identifies the contribution that environmental or ecosystem services make to the price of other goods and or services. For example, a piece of land or home with a scenic view will generally command a higher market price than does a similar piece of land or home without the same view. So if a thriving ecosystem provides a more beautiful view, the difference in price between that property and one without the view would be attributed to the ecosystem itself.
- To use the travel cost method of analyzing the value of ecosystem goods or services, the analyst surveys the amount of money people either are willing to spend or actually spend on visits to a particular place. Expenditures on fuel, vehicle wear and tear, airfares, motels or hotels, restaurant food, entry fees, and so on can be interpreted as the value placed by the traveler on the experience of visiting that location. Complicating factors include income effects, differences in the values placed by visitors on the time they spend traveling to the location, proximity of the location to the visitor's starting point, declining willingness to spend money on subsequent visits, and so on.

Expressed preference methods use hypothetical economic data based on interviews or surveys to estimate the market value of ecosystem goods and services:

- Contingent valuation methods rely on surveys in which people are either asked how much they would be willing to pay to obtain an ecosystem good or service, or they are asked to state how much they would have to be compensated in dollars in exchange for giving up an ecosystem good or service. For example, a group of land owners might be asked how much they would each be willing to pay in order to establish a specific wildlife population on a nearby piece of public land. The total amount for all surveyed land owners could be used as a statistical basis for an approximation of the market value of establishing the proposed wildlife population. Or the same landowners could be asked how much they would have to be paid in compensation in order to get them to give up an existing wildlife population on nearby land. Contingent valuation methods are sometimes less than ideal due to strategic "voting" by survey participants. They are also subject to some unsurprising distortions. People are usually more conservative when they state how much they would be willing to pay to obtain something in contrast with how much they would have to be paid by someone else in order for them to give up something they already possess or that they might possess in the future.
- Welfare measures of value refer to methods in which the total consumer well-being (welfare) associated with an ecosystem good or service is measured by comparing the estimated dollar amounts that all prospective consumers are willing to pay for an ecosystem good or service are compared with the actual cost to society of providing that good or service. To the degree to which the actual cost falls below the amount individuals are willing to pay, an economist would say that consumer surplus or, in other words, surplus economic enjoyment, is (or will be) generated by the good or service being evaluated.

In the replacement cost method, economists add up the amount it would cost to provide a specific ecosystem good or service by means of a human-built method. For example, vegetation on a healthy landscape provides water filtration benefits. To calculate the monetary value of those filtration benefits using this method, an economist would use engineers' estimates of the cost of building one or more water treatment plants to treat the same volume of water to the level as provided by the ecosystem. This method

can also be used to estimate the value of ecosystem services that are expected to be obtained through restoration of a degraded landscape.

The dose-response method is used to estimate the value of a healthy ecosystem by identifying the cost of treatment for ecological damages where treatment or mitigation is required locally, downstream, or downwind. For example, if a degraded ecosystem allows elevated levels of nutrients to pollute a water body that is a source of drinking water at some point downstream, then the cost of treating human and/or livestock illnesses caused by the polluted water can be used to estimate some of the value of repairing the ecosystem so that nutrient runoff is reduced or eliminated. Similarly, the cost of water treatment downstream to remove the nutrient load (thus preventing contamination-related illnesses) can also be used to approximate the value of upstream ecosystem restoration. This method is sometimes closely correlated with the replacement cost method.

In the opportunity cost method of valuation, the following simple rule is applied: The value of something is equal to the value of whatever must be given up in order to obtain it. Based on the rules of mathematical equality, this must mean, conversely, that the value of what was given up is equal to the value of what was obtained in the exchange. This method is sometimes used to make a statement regarding the value of an ecosystem when a damaging activity either is proposed or has already occurred. For example, if a new gold mine is opened on a piece of land, then the total value of the ecosystem goods and services that were given up in order for the mine to be opened and operated is said to be equal to the total economic value generated by the mine.

These and other methods all provide means of quantifying, in dollars, the value of goods and services not directly traded in existing markets. Many of the goods and services provided by healthy rangeland ecosystems are already traded in existing market systems and could be valued by means of identifying the quantities and qualities in which they exist. The estimation of the market value of all of the goods and services provided by the rangeland in this set of allotments falls outside the scope of the present analysis.

Recreation

Residents in nearby counties in Idaho and Oregon engage in fishing, hunting, boating, off-highway vehicle use, camping, wildlife watching, and winter sports throughout the Owyhee Resource Area. Studies conducted in 1995 identified visitor day values and net willingness-to-pay values for recreation here. Table SOCE-7 depicts the value recreationists place on these activities, rather than the actual expenditures. As mentioned above, there are few or no suppliers for recreational equipment in Owyhee County, so most expenditures for this equipment would occur outside the county and likely would not have much of an impact on the local economy, although recreationists would spend money on gasoline and groceries within Owyhee County. However, recreation presents some costs to the county. According to a 2003 report on the social and community aspects of public land grazing policy alternatives (Wulfhorst, Rimbey, & Darden, 2003), the limited staff of the county Sheriff's department is often overwhelmed with requests from recreational users who are lost, having mechanical problems, or injured. Search-and-rescue efforts often draw in community members who have more familiarity with the landscape than the out-of-town users with little knowledge of the area. Each call to help someone hurt, lost, or stranded in the backcountry costs money. In FY2003, search-and-rescue supplies totaled \$1,000 of the \$13,600 budget for the patrol component of the Sheriff's budget, and additional staff members are hired seasonally to respond to incidents (Wulfhorst, Rimbey, & Darden, 2003). The State of Idaho reimburses counties up to \$4,000 per incident to cover some of the costs for volunteer-related expenses and the Sheriff bills the BLM for backcountry patrols. State funds come from the state gas tax and vehicle registrations. However, some county residents are uncomfortable with the idea of state resources being used to rescue recreationists who come from outside the county; attempts to recover costs (\$500 each) from those rescued have been successful only about half the time.

Table SOCE-7: Net willingness-to-pay recreation value for the Owyhee Resource Area

Activity	1995 Value
Deer hunting	\$40.02
Elk hunting	52.42
Antelope hunting	80.47
Other big game	53.65
Waterfowl hunting	42.48
Upland and small game	42.47
Warm-water fishing	39.28
Cold-water fishing	38.08
Developed site recreation	7.45
Disbursed use recreation	4.47
Non-game viewing, photography	28.31

Source: (USDI BLM, 1999b)

Table SOCE-8: Owyhee Resource Area Estimated Recreation Use and Value (1995)

Activity*	Visitor Days	1995 Value
Hunting	70,722	\$3,816,617
Fishing	11,109	429,682
Off-highway vehicles	24,600	696,412
Other motorized use	22,616	640,266
Non-motorized use	10,669	47,689
Camping	39,107	291,344
Other land-based	36,740	717,113
Whitewater boating	1,368	38,714
Other water-based	1,057	29,917
Snowmobiling	2,301	10,285
Other winter sports	423	1,891
Total	220,712	\$6,719,930

*Based on 8 hours per visitor day

Source: (USDI BLM, 1999b)

Social Value of Ranching

As noted in the Owyhee County Natural Resources Plan (Owyhee County Commissioners, 2009) livestock grazing often plays an important social role in this area, in addition to contributing economically. It has been an important component of the local economy in Owyhee County since the late 1860s, when the establishment of the southern Idaho railroad coincided with the migration of sheep through the Owyhee Mountains to Elko, Nevada. Horses and cattle were also introduced in the Owyhee Mountains at that time, and residents of rural Oregon, Idaho, and Nevada have since identified with the

tradition, land use, and history of ranching in these areas. Maintaining the land in agriculture and ranching preserves the rural character and small-community feel, keeps the cost of living lower, and provides ample opportunities for recreation. Harp and Rimbey (2004) found that in communities in Owyhee County where ranching was an essential component, community members felt a much greater connection to each other, to the ranchers, and to local business owners. Among the Owyhee County communities surveyed for the study, Jordan Valley and Marsing communities scored higher in terms of community cohesion, owed at least in part to the large role that ranching plays in each of these communities. Closing a ranch in Jordan Valley or Marsing could have substantial negative social effects.

Environmental Justice

The Executive Order 12898 of February 11, 1994, established the requirement to address environmental justice concerns within the context of federal agency operations. This means that agencies must:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations;
- Ensure the full and fair participation by all potentially affected communities in the decision-making process; and
- Prevent the denial of, reduction in or significant delay in the receipt of benefits of the project by minority and low-income populations.

Evaluation of these impacts requires the identification of minority and low-income populations (including Native American tribes) within the affected area and evaluation of the potential for the alternatives to have disproportionately high and adverse impacts on such populations. Low-income populations are determined based on annual statistical poverty thresholds developed by the Bureau of Census. A low-income community may include either a group of individuals living in geographic proximity to one another or dispersed individuals (such as migrant workers or Native Americans) where the group experiences a common effect or environmental exposure. Minorities are individuals who are members of the following population groups: American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic. (Council on Environmental Quality, 1997)

Table SOCE-1 above shows the median household incomes and poverty rates for all three counties addressed in this document. Owyhee and Malheur counties are largely agriculturally based economies, so incomes are lower and poverty rates are higher.

Table SOCE-9 shows the breakdown in race and ethnicity for both counties. Neither of the counties has a minority population that exceeds 50 percent. However, the proportion of minorities in Owyhee County and Malheur County are higher than the proportions for Idaho (16 percent) and Oregon (21.4 percent), respectively. Crop producers and livestock operations in the United States commonly and legally employ citizens of Mexico and various Latin American countries, and most of these individuals would be classified as minority. Some proportion of the minority populations in Owyhee County and Malheur County could be employed by crop producers and livestock operators, so changes in livestock grazing in these counties could affect some members of the minority communities there.

Table SOCE-9: Race/ethnicity distribution

	Owyhee County	Malheur County
Total	11,389.0	31,326.0
Population by race		
White alone	69.2%	64.4%

	Owyhee County	Malheur County
Black or African American alone	0.1%	0.1%
American Indian and Alaska Native alone	3.1%	0.5%
Asian alone	0.0%	0.9%
Native Hawaiian and other Pacific Islander alone	0.0%	0.1%
Some other race alone	0.0%	0.1%
Two or more races	3.2%	2.7%
Population by ethnicity		
Hispanic or Latino	24.4%	30.3%
Minority	30.82%	35.60%

Source: U.S. Census Bureau, 2006-2010 American Community Survey

3.1.9 Cultural and Paleontological Resources

Cultural resources are past and present indications of human life-ways which create a prehistoric and historic record left in the physical environment. This evidence of human presence on the land can take the form of archaeological sites, natural and modified features, structures, trails and other manifestations of use. Cultural resources also include areas of the landscape known as traditional cultural properties which have past and on-going significance to a people. Historic property is a term used to describe a cultural resource that meets specific eligibility criteria (36 CFR 60.4) for listing in the National Register of Historic Places (NRHP).

The Toy Mountain Group begins in the geologic region known as the Owyhee Uplands, which stretches from north-central Nevada, through the southwestern corner of Idaho, to the southeastern corner of Oregon and ends at the Snake River Plain. The region is characterized by sagebrush-covered plateaus and narrow, deep canyon bottomlands. Perennial waterways are few, but the landscape has a multitude of ephemeral drainages, springs and pluvial collection points. Aboriginal occupation of the greater area dates back several thousands of years. The archaeological record for the Dirty Shame Rockshelter located in southeastern Oregon reveals continual human use from 9,500 years ago to 400 years ago (Hanes, 1988). Sites in the Camas Creek area of southwestern Idaho date from about 6,000 years ago to 150 years ago (Plew, 2008). The region still holds important cultural significance to the people of the Shoshone-Paiute Tribes of the Duck Valley Indian Reservation.

Euroamerican visits to the Owyhee County area started as early as the beginning of the 19th century. A fur trading expedition led by Donald Mackenzie of the Northwest Company traveled to the Snake River country in 1818 and some trappers were reputed to have visited the region as early as 1812 (Idaho State Historical Society, 1964). Starting in the 1840s, the Oregon Trail and its alternates allowed thousands of immigrants to travel to southwestern Idaho and points farther west. Settlement of the area began in the mid- to-late 19th century and the proliferation of gold mining in the 1860s, primarily along Jordan Creek, created a demand for livestock to feed the growing population of prospectors and to supply other markets (Yensen, 1982). Although local mining activities have subsided greatly since its heyday, the demand for beef remains strong. More recently, recreational pastimes such as hunting and backcountry motorized travel have become very popular and bring people to areas previously ignored.

BLM cultural resources specialists conducted a Class I records search in conjunction with Geographical Information Systems (GIS) datasets to identify all known cultural and paleontological sites and all cultural resources surveys conducted within the allotment group. They reviewed project inventory reports

for adherence to current standards and for survey acreage, and checked each site record to verify site location, description and discussion of any type of impacts. Staff also compared GIS range improvement datasets to cultural resources inventory coverage and examined high resolution aerial imagery to identify areas of possible livestock congregation that had not been previously surveyed. BLM archaeologists and a contractor conducted Class III inventories of recognized and potential congregation areas (troughs, reservoirs, springs, salt blocks, etc.) to ascertain the presence or absence of cultural properties. A minimum radius of 50 meters used around these areas is sufficient for survey coverage (Coddington, 2008). Previously recorded sites determined to be within a 100 meter radius of these locations were chosen for monitoring visits to assess any effects. Since there are no new range improvements proposed for any of the allotments, no project-specific inventories occurred. This review process is in accordance with the 1998 Protocol between the SHPO and the BLM, the grazing permit/lease renewal guidelines agreement between the BLM and the SHPO, dated January 29, 1999, and with standard professional procedures for livestock grazing permit/lease renewals. If impacts to NRHP-eligible properties are present, the stipulations of the grazing permit can be modified or other mitigation measures can be authorized to address the presence and protection of these resources.

Within the Toy Mountain Allotments group, previous inventories for cultural resources on BLM administered land total 1,382 acres and 71 acres for land currently under State and private ownership. There are 123 previously recorded cultural sites within the group and none are listed in the NRHP. Of the 115 potential livestock congregation areas on public land, BLM or contracted services personnel surveyed 90 (78 percent), as shown in Table CULT-1. These surveys produced 309 acres of new cultural resources inventory, 17 new cultural sites and 21 previously recorded sites monitored for this analysis. The 25 non-inventoried areas either could not be reached due to access limitations or for other reasons field personnel did not visit them. Six of the allotments have no potential areas of congregation on BLM administered land and/or lacked the presence of recorded sites. No additional surveys occurred within their boundaries.

Table CULT-1: results of cultural resources analysis

Allotment	BLM Acres	Previous Survey Acres	New Survey Acres	Total Survey Acres	Percent of BLM Surveyed	Previously Recorded Sites	New Sites	Sites Monitored	Cong/ Survey ¹
Alder Creek	525	0	6	6	1.1	0	1	0	2/2
Boone Peak	9,455	55	0	55	0.6	6	0	0	0/0
Box T	7,421	126	57	183	2.5	13	3	6	21/21
Bridge Creek	2,567	18	0	18	0.7	7	0	0	3/0
Browns Creek	3,862	1	21	22	0.6	14	3	2	9/9
Garrett FFR	660	0	0	0	0.0	0	0	0	0/0
Hart Creek	24,968	318	24	338	1.4	53	2	3	8/8
Josephine FFR	346	0	0	0	0.0	0	0	0	0/0
Lone Tree	7,131	0	21	21	0.3	4	0	4	14/9
Louisa Creek	9,911	101	25	126	1.3	10	2	2	12/6
Meadow Creek FFR	360	6	23	29	8.1	0	0	0	4/4
Moore FFR	327	0	1	1	0.3	0	0	0	1/1
Munro FFR	78	0	0	0	0.0	0	0	0	0/0
Quicksilver FFR	178	0	0	0	0.0	0	0	0	0/0

Allotment	BLM Acres	Previous Survey Acres	New Survey Acres	Total Survey Acres	Percent of BLM Surveyed	Previously Recorded Sites	New Sites	Sites Monitored	Cong/ Survey ¹
Red Mountain	14,680	209	11	220	1.5	19	0	1	5/5
Stahle FFR	87	0	0	0	0.0	0	0	0	0/0
Steiner FFR	1,574	0	0	0	0.0	0	0	0	1/0
Toy	3,569	69	38	107	3.0	4	0	1	8/8
West Castle	9,785	284	9	293	3.0	12	0	3	3/0
Whitehorse/Antelope	38,016	195	78	273	0.7	81	6	1	24/17
Totals	135,500	1,382	309	1,691	1.2	223	17	21	115/90

¹ Number of potential livestock congregation areas/number of areas surveyed.

Native American Religious Concerns

The Shoshone-Paiute Tribes of the Duck Valley Indian Reservation actively maintain their cultural traditions and assert aboriginal rights and/or interests in this area. As Native American traditions and practices are tied to the elements of the natural environment, any impacts to the earth are of concern to the Tribes. The Tribes have been consulted on the renewal of these grazing permits pursuant to American Indian Religious Freedom Act and National Historic Preservation Act and have not raised any cultural resource concerns. There are no recorded or known traditional cultural properties or identified sacred sites within the allotment group.

Paleontological Resources

Paleontological resources (fossils) have long been recognized for their scientific, educational, and recreational value. A fossil is any evidence of past life, and includes body fossils such as shells and bones, as well as trace fossils such as footprints, burrows, trails, or other evidence of an organism's presence. Fossils are preserved in rocks and are usually discovered when they are eroding out of the rock at the surface, or during ground-disturbing activity such as road grading or trenching. Most individual organisms that lived in the past did not die in such a way as to have their remains fossilized, and fewer still will be collected and studied before they erode away. Therefore, fossils are considered rare and nonrenewable.

All fossils contain information about past life, but not all fossils are significant. Significant fossils are those that are unique, unusual, or rare, are diagnostic, stratigraphically important, and add to the existing body of knowledge. In order to determine a fossil's significance, an assessment must be made by someone who is experienced in the field of paleontology and who possesses a sufficient mastery of the existing body of knowledge to understand how a given fossil contributes to our overall understanding.

The Bureau of Land Management (BLM) has managed fossils as a valued resource for many years. Legal authority to manage fossils comes from a variety of laws, executive orders, and policies. The laws include the National Environmental Policy Act of 1969 (NEPA) and the Federal Land Policy and Management Act of 1976 (FLPMA). More recently, the Paleontological Resources Preservation subtitle of the Omnibus Public Land Management Act of 2009, also known by its popular name, the Paleontological Resources Preservation Act (PRPA), directs land managers within the Department of the Interior Agencies and the U.S. Department of Agriculture, but not including either Indian or Military (Department of Defense) lands, to manage and protect fossils using scientific principles and expertise. PRPA does not make a distinction between the types of organism preserved; therefore, all fossil resources, plants, invertebrates, and vertebrates that are determined to be scientifically significant are to be actively managed.

Paleontological resources are managed in collaboration with BLM partners such as universities and museums across the country, as it is those parties that provide much of the work done on collecting, studying, storing, and providing meaning to our fossil resources. Additionally, BLM and our partners strive to educate the public about the value of this natural heritage.

In general, the desired outcomes for the paleontological resource are to: 1) protect the resource from unnecessary damage, theft, or vandalism; 2) ensure that the resource is responsibly collected by qualified individuals working to benefit the public through their actions; 3) utilize the resource in educational programs for the general public; and 4) teach the public about BLM's role in the management of this important resource.

The impact to fossils from the management of other resources on BLM land can be negligible to deleterious, depending up on nature of those actions. However, by maintaining best practices for the identification of resources and the mitigation of damage, the paleontological resources should continue to remain an invaluable part of the national trust.

There are a total of 30 recorded fossil sites on BLM-administered land within the allotment group and four sites on private and state lands. None of the sites are on or in close proximity to an identified potential livestock congregation area. Fossil-bearing strata underlie parts of four allotments: Browns Creek, Box T, Louisa Creek and Red Mountain (Erathem-Vanir Geological Consultants, 2009). These strata include the Glenns Ferry, Chalk Hills and Black Mesa Gravel layers.

3.2 Environmental Consequences Common to All Allotments

3.2.1 Vegetation, incl. Noxious Weeds

3.2.1.1 Environmental Consequences Common to All Alternatives

The impacts of livestock use on vegetation resources are a response to the season, intensity, and duration that vegetation is grazed or browsed, in addition to the indirect impacts resulting from livestock trampling and loafing. In addition, the frequency of impacts due to critical seasons, intensities, or duration of grazing use will determine whether vegetation resources will be afforded an opportunity to recover between impacting events, is dependent on the vegetation resource's resilience. The section of Appendix E that discusses seasons and intensities of grazing use provides a more detailed summary of potential grazing impacts and includes citations.

Vegetation communities present within the Toy Mountain Group allotments, as noted in the Affected Environment Section common to all allotments (Section 3.1.1), are primarily salt desert shrub, sagebrush steppe, and mountain shrub types, most of which have a co-dominance at potential by deep-rooted perennial bunchgrass species. Deep-rooted bunchgrasses provide the primary source of forage that livestock grazing relies upon for forage. These bunchgrasses, being cool-season species, complete their annual growth cycle beginning with warming temperatures in the spring and early summer and ending upon depletion of soil moisture and hot temperatures of the summer. As a result, the peak of active growth occurs between early May and late June at elevations generally below 5,000 feet; those vegetation communities are dominated by salt desert shrub species and Wyoming big sagebrush types. The period of active growth at higher elevations occurs slightly later and generally extends until mid-July; those vegetation communities are dominated by mountain big sagebrush and mountain shrub types.

The season of greatest impacts to sagebrush steppe vegetation types from livestock grazing occurs during that active growing period from early May until either late June at lower elevations or mid-July at higher elevations. The greatest impacts are centered on the seed formation stage of growth, termed the boot-stage. Appendix E provides more detail with citations.

Generally, frequent grazing of the cool-season bunchgrass species present in the Toy Mountain Group allotments during the active growing season results in declining health and vigor of these deep-rooted bunchgrasses. This provides a competitive advantage for more grazing-tolerant, shallow-rooted grasses and annual invasive species.

Concurrent with the season of grazing use, the intensity of grazing, as often measured through utilization monitoring, contributes to grazing impacts on vegetation resources. Grazing after bunchgrass species have completed their annual growth cycle can occur at a higher intensity with limited impacts, but lighter intensity use is necessary during the active growing season to avoid unacceptable impacts. Generally, grazing in the light to moderate levels during periods of bunchgrass senescence retains adequate vegetation material to protect bunchgrass crowns and maintain soil properties that support maintenance and improvement of perennial vegetation resources.

The duration of grazing use is a third factor, inter-related with seasons and intensities of use, which contributes to impacts from grazing. While plants are actively growing, a longer duration of grazing use can result in the greater likelihood of re-grazing individual plants and vegetation parts that have regrown following earlier grazing. Re-grazing of bunchgrasses during the active growing season does not allow plants to complete their annual growth cycle and replenish reserves held in the roots and crown of the plant during periods of senescence. In addition, failure to complete the annual growth cycle ending in seed formation does not provide seed for recruitment of new plants into the plant community. Once plants have completed their annual growth cycle and enter senescence, the duration of grazing has less potential for impact to cool-season bunchgrasses.

Greater detail concerning the seasons and intensities of grazing use, as they relate to potential impacts to vegetation resources, can be found in Appendix E.

Livestock Trailing

The authorization of livestock trailing within the Owyhee Field Office, including within the allotments of the Toy Mountain Group, was analyzed within the 2012 Trailing EA (USDI BLM, 2012b). Trailing along routes identified in map RNGE-2 has been authorized by decision on an annual basis. Authorization to use approximately 6 additional miles of trailing routes through portions of the Browns Creek, Hart Creek, West Castle, and Whitehorse/Antelope allotments has been requested (Map RNGE-2). These additional routes were not analyzed in the 2012 Trailing EA and are therefore discussed here.

Three alternatives were considered in the 2012 Owyhee Field Office trailing EA, including the permittee's proposal, the BLM proposal that included special terms and conditions for trailing, and no trailing. The EA identified the following potential impacts to vegetation resources:

“Livestock trailing events that occur off established roads/trails would result in minor direct grazing effects. Livestock graze preferentially on herbaceous components of the plant community, to the extent that vegetation is actively growing, non-toxic, and non-piercing. Perennial grasses are most susceptible to grazing impacts during their critical growth periods, i.e. from seed stalk emergence to seed dissemination. Generally, the vigor of perennial grasses can be sustained with repeated light utilization, while repeated moderate to heavy utilization reduces photosynthetic tissue and can diminish vigor. Utilization during periods when plants are

withdrawing reserves from roots for growth, during re-growth, or during seed formation will impact herbaceous species more than the same level of utilization when the plant is not actively growing. During trailing events, cattle tend to actively trail since riders are pushing the cattle, so little grazing is expected. However, because livestock are trailing within a 0.25-mile corridor (including on existing roads), a small amount of grazing of perennial herbaceous vegetation would occur within this corridor.”

The additional 6 miles of trailing routes in the application received does not differ from those routes analyzed in the 2012 Trailing EA. As a result, the full analysis of impacts to vegetation resources from livestock trailing that was analyzed in the 2012 Trailing EA is incorporated by reference.

Weeds

Grazing of livestock includes the continued risk of introducing noxious weeds and invasive species to public lands and potential for spread of existing incursions. Although the presence of listed weeds, cheatgrass, and other invasive annual species was identified in the rangeland health assessments, evaluations, and determinations for the Toy Mountain Group allotments, no location within the allotment was found to be dominated by these species.

Livestock may spread weeds and invasive species through transport on fur and hoofs, as well as through ingestion and later defecation of viable seeds. This transport can occur from sources used prior to scheduled use of public land, between sites within the allotment, or to locations outside the allotment at the end of the grazing season. Soil disturbance resulting from livestock concentration adjacent to water sources, salting areas, and routes of travel provides sites for establishment of weeds and invasive species. The level of risk associated with implementation of each of the alternatives considered in this EA is proportional to the number of livestock authorized to graze within the allotment and the concentration of soil disturbance. Risks of weed and invasive species introduction and spread would be greater, with significantly higher cattle numbers as vectors of seed movement and as soil disturbance is increased, while those risks associated with authorized livestock grazing would be eliminated in the no-grazing alternative.

In the absence of significant and specific weed infestations within any of the Toy Mountain Group allotment, further allotment-specific and alternative specific analysis is not applicable. As noted in the Affected Environment Section (Section 3.1.1), BLM works closely with the Idaho Department of Agriculture, Tribal governments, and county governments to combat noxious weeds. Cooperative weed management arrangements utilize local, state and Federal resources to inventory and treat weed infestations on both public and private lands.

Juniper Encroachment

Grazing practices would not impede juniper encroachment in instances where juniper has reached the point of beginning to dominate the site. A full gradient of juniper encroachment extends from the period of seed introduction and germination, through stand maturation, to full occupation of a site by junipers trees. Miller et al. (2005) identified phases of juniper encroachment beginning with an early stage (Phase I) including active expansion into sagebrush steppe vegetation types and an open canopy of young trees, generally less than 40 years old. The mid-successional stage of juniper encroachment (Phase II) entails the expansion of tree and their canopies to co-dominate the plant community, with reduced health and vigor of shrubs and herbaceous species within sagebrush steppe vegetation types. The complete occupation of the site with juniper dominance (Phase III) includes the full grow-out of surface roots resulting in shrub die-off exceeding 75 percent and declining understory production.

Juniper is not fire tolerant and periodic fire that occurs under natural disturbance regimes in sagebrush steppe excludes juniper from the landscape, except from inclusions on landforms and soils that did not support fire and were isolated from historic fire return intervals. A reduction in the frequency of fire in the landscape has been attributed to a number of factors (Miller, Bates, Svejcar, Pierson, & Eddleman, 2005):

- Increasingly sophisticated fire suppression;
- A period of wet, mild climatic conditions in the late 1800s and early 1900s coinciding with post-European settlement;
- The introduction of, and season-long grazing by, large numbers of domestic livestock beginning in the late 1800s. Uncontrolled livestock grazing reduced fine fuels and significantly reduced the frequency, extent and effect of naturally occurring fire; and
- Increasing atmospheric carbon dioxide since the beginning of the industrial revolution.

The authors also identified the cessation of aboriginal burning that significantly influenced the expansion of juniper.

While current livestock management practices may alter the extent and connectivity of fine fuels, especially when grazing occurs at high intensity, light to moderate levels of grazing generally do not reduce fuels to a degree that would alter fire behavior, as noted in Section 2.3 of this EA. Thus, appropriate grazing management practices that include light to moderate levels of use, and opportunities for recovery of herbaceous species following growing season use, are consistent with natural fire return intervals that would control juniper in Phase I conditions. At the same time, once juniper encroachment reaches Phase II conditions, and especially at Phase III conditions, fuels reduction derived from grazing of herbaceous species become less of a factor affecting the control of juniper from natural fire regimes.

Juniper, at all stages of growth, is little effected by competition from herbaceous and shrub species due to its large seed size, capability of using soil water any month of the year, and early development of roots that access water in both the shallow profile of the soil used by herbaceous and shrub species as well as deep water only partially utilized by shrub species. As a result, any reduction from grazing in the competitive ability provided by native bunchgrass species with juniper establishment or development has little effect on juniper encroachment or expansion.

3.2.1.2 Environmental Consequences of Alternative 1

Implementation of Alternative 1 would continue current livestock management actions in the Toy Mountain Group allotments, only differing from terms and conditions of current permits with a small reduction of livestock numbers in some allotments. These reductions would occur consistent with grazing levels that have been reported in recent years and would result in impacts to vegetation resources similar to those that have recently occurred. Impacts to vegetation resources from levels of grazing use and grazing schedules that vary widely between allotments will be identified in subsequent allotment-specific analysis of Alternative 1, as they relate to meeting the Idaho Standards for Rangeland Health and the ORMP vegetation management objective.

Reed and others (1999) proposed a grazing response index based on the seasons, intensity, and duration of grazing use. Considering the variation of seasons, intensities, and duration of grazing proposed within each of the 20 allotments of the Toy Mountain Group under Alternative 1, it is difficult to assess those livestock management actions against the grazing response index.

Similarly, the variation of practices proposed and the stressors to biotic function induced by livestock management practices resulting from Alternative 1 terms and conditions would not be consistent through all the allotments of the Toy Mountain Group. Therefore, the additive stressors induced by climate

change, primarily altered precipitation and temperature regimes with livestock management practices proposed, cannot be assessed in a meaningful way.

3.2.1.3 Environmental Consequences of Alternative 2

Implementation of Alternative 2 would apply grazing management practices in the Toy Mountain Group allotments in accordance with applications received for permit renewal from current permittees. Impacts to vegetation resources from levels of grazing use and grazing schedules that vary widely between applications will be identified specific to each allotment in subsequent allotment-specific analysis of Alternative 2, as they relate to meeting the Idaho Standards for Rangeland Health and the ORMP vegetation management objective.

Reed and others (1999) proposed a grazing response index based on the seasons, intensity, and duration of grazing use. Considering the variation of seasons, intensities, and duration of grazing proposed within each of the 20 allotments of the Toy Mountain Group under Alternative 1, it is difficult to assess those livestock management actions against the grazing response index.

Similarly, the variation of practices proposed and the stressors to biotic function induced by livestock management practices resulting from Alternative 2 terms and conditions would not be consistent through all the allotments of the Toy Mountain Group. Therefore, the additive stressors induced by climate change, primarily altered precipitation and temperature regimes with livestock management practices proposed, cannot be assessed in a meaningful way.

3.2.1.4 Environmental Consequences of Alternative 3

Implementation of Alternative 3 would apply constraints to limit seasons and intensities of grazing use during the active growing season for native deep-rooted bunchgrass species. The constraint for upland vegetation includes limiting the frequency of active growing season use to no more than 2 in 3 years, a treatment that allows two growing seasons for the resilience of cool-season native bunchgrass species to regain health and vigor following one year of active growing season use. The maximum allowable utilization of rangelands of 50 percent (stated in the ORMP) would allow recovery from active growing season use in 1 of 3 years and grazing use during periods of plant senescence in 2 of 3 years.

Implementation of the constraint to limit the frequency of active growing season use to no more than 1 in 3 years would allow native perennial vegetation resources to regain and maintain health and vigor and result in meeting Standard 4¹⁵⁵ and the vegetation management objective of the ORMP where meeting the objectives, including Standard 4, is limited by current livestock management practices.

Alternatively, the constraints under Alternative 3 allow for grazing use in as many as 2 of each 3-year period when potential impacts to vegetation resources from this frequency of grazing use during the active growing season are additionally constrained by limits to the intensity of grazing use that occurs by the end of the active growing season. When the duration of grazing use during the active growing season is 30 days or fewer, utilization would not exceed 41 percent (the light category of utilization under the key forage plant method), to compensate for the more frequent active growing season use. When the duration of grazing use during the active growing season is more than 30 days, utilization would not exceed 21 percent (the slight category of utilization under the key forage plant method) to further compensate for a long duration of frequent active growing season use. Implementation of the constraint to limit the frequency of active growing season use to no more than 2 in 3 years, when combined with limitations to the intensity and duration of use, would allow native perennial vegetation resources to regain and maintain health and vigor and result in meeting Standard 4 and the vegetation management objective of the ORMP where meeting the objectives, including Standard 4, is limited by current livestock management practices (see Appendix E).

¹⁵⁵ Meeting Standard 4 includes making progress toward meeting the standard, as well as continuing to meet the standard.

When livestock management actions under Alternative 3 are compared with the grazing response index suggested by Reed and others (1999), the intensity of grazing use would be held within acceptable limits, suggesting less harmful impacts to plant health than under Alternative 1 or Alternative 2. However, the opportunity for livestock removal of some photosynthetic material during the growing season (more than three times) and limited chance for regrowth following scheduled grazing use, combined in 2 of 3 years of the grazing schedule, suggest a greater likelihood of impacts to plant health than would occur under Alternative 4. The ORMP management objective to improve unsatisfactory vegetation health/condition would be met in those locations where current livestock management practices are a limiting factor, with improvement toward less than 10 percent of the area in early condition and more than 40 percent in late or potential natural condition.

The reduction of stressors to biotic function induced by livestock management practices resulting from Alternative 3 terms and conditions, primarily limiting growing season grazing and utilization levels, would be anticipated to mitigate the additive stressors induced by climate change, primarily altered precipitation and temperature regimes. Vegetation communities that retain resistance and resilience from downward trend induced by changing climate would be supported.

3.2.1.5 Environmental Consequences of Alternative 4

Implementation of Alternative 4 would apply constraints to primarily limit the frequency of active growing-season use for native deep-rooted bunchgrass species, with additional limitations to the intensities of grazing use. The constraint for upland vegetation includes limiting the frequency of active growing season use to no more than 1 in 3 years, a treatment that allows two growing seasons for cool-season native bunchgrass species to regain health and vigor following one year of active growing season use. The ORMP maximum allowable utilization of rangelands of 50 percent would limit the impacts from the intensity of use within parameters that would allow recovery from active growing-season use in 1 of 3 years and during periods of plant senescence in 2 of 3 years. Implementation of the constraint to limit the frequency of active growing-season use to no more than 1 in 3 years would allow native perennial vegetation resources to regain and maintain health and vigor and result in meeting Standard 4 and the vegetation management objective of the ORMP where meeting the objectives, including Standard 4, is limited by current livestock management practices.

When livestock management actions under Alternative 4 are compared to the grazing response index suggested by Reed and others (1999), frequency of grazing use during the active growing season would be limited, while the intensity of grazing use would be held within acceptable limits, suggesting less harmful impacts to plant health than under Alternatives 1 or 2. However, the opportunity for livestock removal of some photosynthetic material during the growing season (more than three times) and limited chance for regrowth following scheduled grazing use, combined in 1 of 3 years of the grazing schedule, suggest a limited likelihood of impacts to plant health compared to Alternatives 1, 2, or 3. The ORMP management objective to improve unsatisfactory vegetation health/condition would be met in those locations where current livestock management practices are a limiting factor, with improvement toward less than 10 percent of the area in early condition and more than 40 percent in late or potential natural condition.

The reduction of stressors to biotic function induced by livestock management practices resulting from Alternative 4 terms and conditions, primarily limiting growing season grazing and utilization levels, would be anticipated to mitigate the additive stressors induced by climate change, primarily altered precipitation and temperature regimes. Vegetation communities that retain resistance and resilience from downward trend induced by changing climate would be supported.

3.2.1.6 Environmental Consequences of Alternative 5

Implementation of Alternative 5 would remove the impacts of grazing management practices associated with authorized livestock grazing within allotments of the Toy Mountain Group. Vegetation resources would be provided with an absence of authorized livestock grazing for 10 years to recover health and vigor and would result in meeting Standard 4 and the vegetation management objective of the ORMP where meeting the objectives, including Standard 4, is limited by current livestock management practices.

3.2.2 Soils

3.2.2.1 Environmental Consequences Common to All Alternatives

Analyses of the alternatives are based on consequences of seasons and intensities of livestock grazing use (Appendix B) that have led to the current conditions for soil as displayed in Section 3.1.2. Consequently, Alternatives 2 to 5 are compared with Alternative 1 (current condition) to assess the different levels of effects on soil and upland watershed conditions. A brief comparison against the remaining alternatives is also discussed. The following section provides ecological, physical, and biological concepts for expected soil impacts resulting from livestock management practices and is common to all grazing alternatives. Common environmental consequences from direct and indirect effects of the individual alternatives follow.

A detailed discussion of rangeland vegetation inventory and ecology and the concepts of the state-and-transition model can also be found in Section 3.1.1 and Appendix E. More site-specific information on plant communities for the allotments is available in the Upland Vegetation Sections 3.1.1 and 3.2.1. For processes involving upland soils and sediments and their effects on water resources, riparian areas, and wetlands, please refer to Water Resources Sections 3.1.3 and 3.2.3.

Introduction

The effects and consequences of grazing on soil resources are related to the intensity, season, frequency, and duration of use by livestock. Livestock primarily affect soils via two methods. First, the consumption of vegetation can indirectly alter plant composition, ecological function, community structure, health, and diversity. Second, impacts from hoof action physically affect soils directly through trampling and compaction. All impacts can lead to changes in soil physical, chemical, and/or biological properties.

Soil physical properties include soil bulk density, erosion, surface crusts, and infiltration. Soil chemical properties consist of minerals, organics, soil nutrients, and pH. Soil biological properties include micro- and macroorganisms that can have considerable influence on soil structure and nutrient availability. Alterations to any of these properties from inappropriate grazing management practices can affect the fertility, productivity, and sustainability of soils and associated native plant communities of managed rangelands.

Soils and Vegetative Cover

Vegetation controls soil erosion with its canopy, roots, and litter components; erosion influences vegetation in return in terms of composition and structure of the plant community, as well as growth pattern (Gyssels, Poesen, Bochet, & Li, 2005). Vegetation protects the soil against wind and water erosion through the physical binding of soil particles by stems and living roots, raindrop interception, and the retention of runoff. Consequently, soil surface and ground cover disturbance from grazing reduces the capability of a site to withstand the loss of soil resources by wind and water erosion and essentially leads to higher nutrient loss (Rietkerk & van de Koppel, 1997). With ongoing reduction in plant density, plant growth can be reduced below grazing-induced plant losses, thereby adversely affecting the stability of the

grazing system; as part of a downward cycle, the negative plant/soil interaction can lead to further degradation.

Soil loss results from the combined effect of aboveground biomass and roots (Gyssels, Poesen, Bochet, & Li, 2005) due to the reduced protective cover and soil binding capabilities from diminished root depth and strength. A decline in cover increases bare ground that initiates larger and more connected surface water flow patterns. The resulting accelerated erosion and movement of sediments leads to soil loss and degradation, changes in infiltration patterns, and loss of organic matter and persistent litter (Lusby 1965) (Meeuwig 1970) (Meeuwig 1971) (McCalla, II, Blackburn, & Merrill, 1984a). This makes it increasingly more difficult for herbaceous cover to regenerate and maintain, so that nutrient cycling, soil stability, and hydrologic function are further altered over the long term, leading to additional decline in rangeland health.

When bunchgrass communities transition from deep-rooted species to shallow-rooted plant communities, or when invasive annuals dominate, soil erosion potential increases. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest (Stoddart 1946) (Blaisdell and Pechanec 1949) (Mueggler 1972) (Mueggler 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Burkhardt and Sanders 2010) (USDA NRCS 2012). Some of these sources suggest this deferment or rest occur as frequently as 2 of every 3 years or more often. Conservation of native bunchgrasses therefore plays a vital role in upholding soil stability through management of rangeland vegetation.

Soil stability is a primary control over the fertility, productivity, and sustainability of managed ecosystems and serves as a major indicator of long-term range productivity and health. Disturbance to surface soils by livestock grazing can adversely influence ecosystems through the alteration of vegetation cover, soil physical properties, microbial communities, carbon cycling, nitrogen fixation, and hydrologic properties (Schlesinger, Raikes, Hartley, & Cross, 1996).

Where livestock utilization levels are increased, the quantity of vegetative material is reduced and canopy cover declines. Additionally, deposition of protective plant litter to the soil surface, incorporation of litter into the soil, and the density and distribution of plant roots in the soil profile are decreased. As a result, a reduction in vegetative material allows for increased runoff due to reduced infiltration capacities and elevated erosion potential (Thurow, Blackburn, & Taylor, Jr., 1986) (Pluhar, Knight, & Heitschmidt, 1987). The effects of changes in the amounts of available soil water can, therefore, be expressed by changes in the biomass of grasses, of woody vegetation, and of infiltration rate (Walker, Ludwig, Holling, & Peterman, 1981).

Seasonal Effects on Soils

Physical Impacts

Impacts on soils and upland watershed resources vary during different grazing seasons and from changes in vegetation due to annual use of a pasture (Table SOIL-9). During the winter, frozen soils are more resilient to mechanical hoof damage and compaction. However, when grazing occurs during the late winter, spring, or early summer season on wet or saturated soils, the physical impacts of compaction and pugging (plunging hoofs into wet soil, forming a void) create long-lasting consequences (Warren, Thurow, Blackburn, & Garza, 1986) (Eldridge, 2004). These impacts not only inhibit water infiltration and increase puddling, surface runoff, and erosion, they also reduce vegetative growth because the modification of soil structure and sealed soil pores restrict the movement of water, air, and roots (Bilotta, Brazier, & Haygarth, 2007).

Table SOIL-9: Summary of seasonal grazing effects on several soil related variables; seasons may overlap based on elevation, aspect, and topographic differences

Season of Use	Soil Moisture	Grazing Effects					
		Vegetation	Pugging*	Biological Soil Crusts	Compaction Potential*	Erosion Potential	General Effects
Early Spring Grazing (Feb. – Mar.)	available for veg growth; some frozen soils	low - annuals available; most others dormant	low to high depending on freeze/melt conditions	low/mod*	high – increased during thaw	low/high*	low/high
Spring and Upland Growing Season Grazing (Mar. - July)	reduced to no availability as season progresses; increasingly less regrowth potential	high - critical growth and seed production; reduced ground cover w. grazing	high at first, reduced in early summer	mod/high	high – increased during wetter months	low/mod*	high
Summer Grazing (July – Oct.)	limited to no availability for regrowth	low/mod – minimal growth; reduced ground cover w. grazing	low	high	low/mod – increased congregation near water sources	low	low/mod
Fall Grazing (Oct. – Nov.)	available	low/mod - emerging annuals	low/mod	mod/low	low/mod	low/mod	low/mod
Winter Grazing (Dec. – Feb.)	available; frozen soils	low – emerging annuals; most others dormant	low/mod	low*	moderate/high – increased with freeze thaw	low/mod	low/high

*can be excessive with high or prolonged precipitation event any time of the year

Medium- to heavy-textured soils, typically clay, are especially prone to damage during the early seasons because they tend to have high moisture-holding capacity, are usually at or near field capacity, or have higher water content due to snow melt (Warren, Thurow, Blackburn, & Garza, 1986). Severe weather conditions, such as snow storms, may also limit animal distribution and can result in heavy localized congregation that leads to utilization or elimination of the remaining plant cover, thus increasing the susceptibility to localized compaction, pugging, and pedestaling.

Physical impacts are always more damaging where the soil is bare, so maintenance of good vegetative cover is essential to lessen the effect of cattle hooves on soil. In areas of water, shade, salt, or mineral locations, compaction from livestock congregation and trail networks can initiate runoff and result in accelerated short- or long-distance movement of sediments.

Where flexibility in the grazing schedule is given, the number of livestock could vary and be increased. While AUMs may stay the same, grazing intensity would increase with elevated livestock numbers over a shorter amount of time and could negatively affect upland soil and watershed health, depending on the season of use. Where livestock numbers are more clearly defined to identify the maximum numbers of cattle on all landownership within the allotment, the flexibility of adding an unidentified number of livestock over a shorter amount of time would be removed. This would reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers and season of use.

Biological Soil Crusts

Mechanical impacts from livestock not only disturb soil structure, they negatively affect biological soil crusts that function as living mulch, retain soil moisture, provide stability, influence nutrient cycling, and

discourage annual weed growth. Biological soil crust condition and spatial extent are indicators of the ecological health of the plant community; thus, disturbance that results in even small losses of biological crusts can dramatically reduce site fertility and soil productivity and soil moisture retention, and further reduces soil surface stability and soil organic matter (Eldridge & Greene, 1994) (Belnap & Gillette, 1998).

Season of use by livestock has a significant effect on biological soil crust cover values and species richness (Marble & Harper, 1989). As crustal species are only metabolically active when wet and are brittle when dry, physical disturbance during the summer season is generally more destructive, and organisms do not recover as easily as when disturbed in wet seasons. Although biological soil crusts are not as fragile during moist periods and may continue to grow from late winter through early spring with favorable soil water conditions, growth can be disrupted if heavy livestock surface disturbance persists during that time.

Utilization

Impacts on soils from changes in vegetation due to utilization of a pasture vary depending on the season. Heavy continuous grazing is generally most impactful to soil hydrologic function, while the effects of moderate to light continuous grazing are significantly less deleterious and frequently are not significantly different from each other (McCalla, II, Blackburn, & Merrill, 1984a). Heavy to severe defoliation exposes the soil surface to erosive forces of wind and water and affects the soil moisture regime. Moderate utilization, in years with minimal soil moisture availability for regrowth after use, can deplete plant vigor and health, especially during periods of critical growth. Light to moderate utilization (see Section 3.1.1 and Appendix E) of early vegetative growth has minimal impacts on regrowth when adequate soil moisture is available for completion of the annual growth cycle.

Livestock Congregation Around Riparian Uplands

Although native upland communities are less susceptible to negative impacts from defoliation during the latter part of summer, livestock often congregate near water developments or riparian sources during the hot season and can intensify localized impacts on upland and riparian soils within areas of concentrated activity (Clary & Webster, 1989). While riparian zones within managed rangelands generally only account for a minor portion of the overall area, they are a critical source of diversity and productivity. During heavy winter storms, similar patterns can be expected. Disproportional congregation of livestock during any season therefore promotes the potential of impacts to protective ground cover, resulting in compromised soil stability and hydrologic function in localized areas compared to remaining portions of the pastures.

Soils and Invasive Plants

Annual Grasses

The dominance or spread of cheatgrass and other invasive annual plants in several of the Toy Mountain Group allotments is reflected in the monitoring data and was evident during field visits¹⁵⁶. Invasive annual plants modify the ecosystem attributes of soil temperature and soil water distribution, provide less root mass and soil stability than perennial bunchgrasses, reduce the diversity and cover of microbiotic crusts, out-compete native plants, and adversely alter fertility and organic matter from shortened fire intervals and their associated impacts (Pellant, 1996). Also, deep percolation is limited when shrubs and deep-rooted bunchgrasses are reduced or absent. Increased bare ground and gaps in perennial vegetation may serve as an early warning indicator of when cattle grazing or other stressors are compromising resistance of a sagebrush ecosystem to annual invasive plants; maintaining and conserving bunchgrass cover and

¹⁵⁶ For detailed information, see RHAs and Determinations and the 2013 Group 3 Soil Field Reports (in the project record)

community structure therefore continues to be of highest priority (Reisner, Grace, Pyke, & Doescher, 2013).

Using cattle to reduce herbaceous biomass to levels that would strongly influence fire behavior under extreme fire conditions would require utilization levels that would potentially degrade shrub and grassland communities and compromise sustained livestock production (Launchbaugh, et al., 2008). This is especially critical for soils, as targeted grazing generally occurs during the late winter and spring season when wet soils are especially susceptible to impacts. On the other hand, the extremely flammable conditions associated with standing dead cheatgrass and other non-native annuals increase the risk of wildfire and post-fire erosion hazard. The resulting combination of water movement on unprotected steep slopes and wind erosion promotes soil surface loss and degradation, reduces soil productivity, and adds to deteriorating conditions.

Individual plant species affect rates of litter accumulation and availability, with the litter of a variety of grass species differing in rates of decomposition and nutrient immobilization or release (Facelli & Pickett, 1991). These differences establish feedbacks that affect both litter quality and the rates at which soil nutrients are released from organic to inorganic forms (Blank, Morgan, Clements, & Mackey, 2013). Monocultures, such as cool-season invasive annuals that produce nutrient-poor litter, can reduce soil nutrient storage and affect long-term range productivity. Although invasive annual plants provide spring forage for livestock and cover for watershed protection by effectively reducing raindrop energy and protecting from wind erosion, they can affect the biological and chemical aspects of soils and long-term (more than 10 years) rangeland health.

Soil disturbance resulting from livestock concentration adjacent to water sources, salting areas, and routes of travel provides increased sites for establishment of weeds and invasive species. As a result, livestock are expected to contribute to the spread of weeds through transport and defecation across the Toy Mountain Group allotments, especially if grazing during the critical growing season reduces the competitive potential presence of the remaining native vegetation.

Western Juniper

Western juniper invasion in former grass- and shrub-dominated ecosystems can have a negative influence on hydrologic cycles, soil stability, and vegetative community composition and diversity. Many juniper ecosystems are subject to accelerated erosion, as juniper overstory significantly affects production, diversity, and cover of the herbaceous layer (Miller, Bates, Svejcar, Pierson, & Eddleman, 2005), while others remain stable. Davenport et al. (1998) and Miller et al. (2005) suggest that such differences in soil erosion are a function of site erosion potential, determined by climate, geomorphology, soil erodibility, and ground cover, as well as soil depths and plant associations.

Because ground cover has a primary effect on erosion rates (Wood, Wood, & Tromble, 1987), reductions of herbaceous intercanopy plants as a result of competition from juniper can cause erosion rates to increase. Added impacts from livestock grazing then have the potential to directly move a juniper site across an erosion threshold by concurrently reducing intercanopy vegetation cover and soil water infiltration capacities through trampling effects (Davenport, Breshears, Wilcox, & Allen, 1998). However, even in the absence of livestock grazing, closed canopy stands produce limited shrub and herbaceous biomass, while the rate of decline may be lessened with limitation of grazing. Where juniper is still encroaching after a fire, the decreased plant biomass, insufficient residual litter amounts and persistent soil cover, decreased root structure diversity, increased erosion potential, and an altered hydrologic and nutrient cycle persist over the long term (more than 20 years).

Juniper is highly competitive in terms of available soil moisture, nutrients, and understory photosynthetic needs (Pierson, Bates, Svejcar, & Hardegree, 2007) (Wilcox & Davenport, 1995). As juniper increases

and shrubs and bunchgrasses are lost from the plant community, hydrologic function, such as infiltration, is impaired due to the lack of diversity in plant structure and spatial distribution of roots. Over the longer term (more than 20 years), the imbalance in vegetative composition associated with juniper in comparison to ecological potential is the primary concern for upland watershed health. Improvements to plant communities therefore remain static or at a downward trend regardless of whether livestock grazing occurs.

Climate Change

Climate variability can directly drive soil changes where, depending on the resilience of the system, certain rangelands may be able to adapt to change by exploiting instabilities, rather than rebounding from disturbances and returning to a steady state (Walker, Ludwig, Holling, & Peterman, 1981). In some areas of the allotments, heavy grazing or lack of deferment, combined with climate change, may exacerbate the effects of drought on vegetative condition by further weakening plants, increasing invasive annual plants, accelerating shifts in plant species composition, and promoting the deterioration of soils and rangeland. Where a water-limited system is present, any reduction in the rate of water infiltration to soil is critical and may negatively affect the plant community over time (Walker, Ludwig, Holling, & Peterman, 1981).

The altered future climate may not provide soil conditions that are favorable for current plant species where they presently occur; over time, these climate-induced imbalances will promote shifts and associated changes in soil. At this point, global climate change does not have a clear cause-and effect-relationship with the proposed action or alternatives. Although rotational grazing may not prevent deterioration of soils and rangeland with a series of drought years, it may decrease the rate of deterioration and reduce the effects of a decline in soil quality and productivity (Teague, Dowhower, & Waggoner, 2004).

Trailing

The 2012 Trailing EA (USDI BLM, 2012b) discussed the majority of trailing that occurs across the Toy Mountain Group allotments. However, approximately 6 additional miles of cattle trailing routes through portions of the Browns Creek, Hart Creek, West Castle, and Whitehorse/Antelope allotments (Section 2.1.3; Map RNGE-2) were not analyzed in that EA and are therefore discussed here.

The effects of trailing on upland soils on the new route would depend on the pounds per square inch of impact, trailing frequency and timing, and the climatic conditions during and after trailing. Livestock trailing is the relatively rapid movement of animals (at least 5 miles per day for cattle). Overnighting livestock increases the magnitude of spatial and temporal impact on soils within a localized area.

The majority of trailing would occur along approximately 6 miles of established gravel or native surface roads and their associated borrow ditches. Animals may spread out up to an eighth of a mile on each side of the routes (total ¼-mile width), potentially impacting about 1,020 acres of soil and vegetated areas once or several times over each route within a year.

Roughly 460 acres (45 percent) of the soil surface within trailing corridors are classified as gravelly fine sandy loam to fine sandy loam, and 560 acres (54 percent) are classified as gravelly loam to loamy (USDA NRCS, 1991) (USDA NRCS, 2003), with the majority of soils (79 percent) containing a gravelly component. Soil susceptibility to wind erosion (Wind Erodibility Index) is low, with moderate to moderately high patches around the Browns Creek drainage and toward the northernmost portion of the West Castle allotment.

The potential for sheet and rill erosion by water (K-factor, whole soil, based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity) is slight for the

West Castle and Browns Creek allotments, and moderate to very severe in Whitehorse/Antelope and Hart Creek allotments, with highest rates in the Browns Creek drainage and the drainage just east of the state land parcel near Antelope Springs. Soil information was obtained from the Natural Resources Conservation Service's erosion hazard potentials (USDA NRCS, 1991) (USDA NRCS, 2003) and Soil Data Viewer. Refer to the 2012 Trailing EA (USDI BLM, 2012b) that adequately identifies impact ratings under different soil conditions.

Watershed and soil disturbance associated with trailing varies by such factors as slope, aspect, soil type, precipitation, and plant community composition and distribution. Impacts to soils from livestock trailing would include a potential loss of ground cover, such as biological soil crusts, litter, and vegetation, when trailing occurs off existing roads and trails. Trampling can cause soil compaction and erosional pedestals, especially where ground cover has been reduced or removed and when soils are wet. In annual or shallow-rooted dominated plant communities, soil erosion potential risk increases.

Overall effects on watersheds and soils due to trailing are minor because disturbance occurs on a relatively small proportion of the landscape and are of very short durations (1 to 2 days). Consequently, the impacts are not expected to have lasting upland watershed or soil effects for the long term. Adherence to range readiness criteria (Appendix I) would prevent much of the compaction issues by restricting trailing on wet (saturated) soils in addition to limiting trailing to existing roads.

Effects on watersheds and soils due to trailing in overnighting areas would be the same as mentioned above, except they would be more concentrated and for a longer duration (although not more than one night per location). Thus, more trampling and soil disturbance is expected to occur within these areas, resulting in a higher probability of plant and biological soil crust mortality, soil compaction, and increased erosion. Because use would be limited to one night per site, regrowth of remaining plants is expected but depends on available soil moisture.

Livestock trailing would occur every year as needed and is not dependent on whether an allotment or pasture is rested or deferred during the time of trailing. The same effects as discussed in this Section and in the 2012 Trailing EA would apply to each of the Toy Mountain Group alternatives. The analysis is incorporated here by reference (Section 3.1 of the 2012 Trailing EA (USDI BLM, 2012b)).

Direct and Indirect Effects - Introduction

The impacts discussed in this Section under each alternative focus primarily on the differences among season of use. Resource constraints (Section 2.2.3 and Section 2.2.4) were applied to Alternatives 3 and 4 and, in some cases, resulted in an additional reduction of livestock numbers and AUMs. As a result, limiting grazing intensity and season of use reduces impacts during the wet season when soils are most vulnerable to trampling. Equally important is deferment or rest during the critical growing season to encourage plant vigor, regrowth, and soil stability. Table SOIL-10 summarizes each alternative from a soils perspective by comparing the season of use to determine which alternative provides the greatest potential resources benefits.

Table SOIL-10: Alternative summary applying soil constraints (Section 2.2.3 and 2.2.4) that determine deferment or rest based on season of use, and incorporating critical growing season use for all Toy Mountain Group allotments

Allotment	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Alder Creek FFR	No D/R, CGSU all yrs	No D/R, CGSU all yrs	D/R 2 out of 3 yrs	D/R 2 out of 3 yrs (defined livestock numbers)	none
Boone Peak*	D/R all years,	NA	NA	NA	none

Allotment	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
	CGSU all yrs				
Box T	P1-4: D/R all yrs P1: CGSU all yrs P2: CGSU 1 out of 2 yrs	P1-4: D/R all yrs P1, 2, 3: CGSU in all yrs	P1-4: D/R P3, 4: CGSU 1 in 3 yrs P1: CGSU 2 in 3 yrs	P1-4: D/R all yrs P1, 3, 4: CGSU 1 in 3 yrs	none
Bridge Creek*	D/R all years, CGSU all yrs	NA	NA	NA	none
Browns Creek	D/R 1 out of 2 yrs	D/R 1 out of 2 yrs	D/R 1 out of 2 yrs	D/R 2 out 3 yrs	none
Fossil Creek [#]	NA	No D/R, CGSU all yrs	D/R 1 out of 3 yrs	D/R 2 out of 3 yrs	NA
Garrett FFR	No D/R, CGSU all yrs	No D/R, CGSU all yrs	D/R 1 out of 3 yrs	D/R 2 out of 3 yrs	none
Hart Creek	P1, 2: D/R 1 out of 2 yrs P3: No D/R all yrs; CGSU all yrs	P1, 2: D/R 1 out of 2 yrs P3: No D/R all yrs; CGSU all yrs	D/R 1 out of 3 yrs	D/R 2 out of 3 yrs	none
Josephine FFR	No D/R, CGSU all yrs	No D/R, CGSU all yrs	D/R 1 out of 3 yrs	D/R 2 out 3 yrs	none
Lone Tree	P1(2), 3: No D/R, CGSU all yrs P4, 5, 6: D/R all yrs	P1(2), 3, 4, 5, 6: Some D/R, some CGSU	P1(2), 6: D/R 1 out of 2 yrs P3, 4, 5: D/R all yrs	P1(2), 4, 6: D/R 2 out of 3 yrs P3, 5: D/R all yrs	none
Louisa Creek	P1, 2(6): Some D/R P3, 4, 5: D/R all years, CGSU all years	P1, 2(6): D/R 1 out of 2 yrs P3, 4, 5: D/R all years, CGSU all yrs	P1, 6: D/R 1 out of 3 yrs P2: D/R 2 out of 3 yrs P3, 4, 5: D/R all yrs, CGSU mixed	P1, 2, 3, 6: D/R 2 out of 3 yrs P4, 5: D/R 2 out of 3 yrs, some CGSU	none
Meadow Creek FFR	No D/R, CGSU all yrs	D/R all yrs with CGSU all yrs	D/R 2 out of 3 yrs	D/R 2 out of 3 yrs (defined livestock numbers)	
Moore FFR	No D/R, CGSU all yrs	D/R all yrs with CGSU all yrs	D/R all yrs; CGSU 1 out of 3 yrs	D/R all yrs; CGSU in 1 out of 3 yrs (defined livestock numbers)	none
Munro FFR	No D/R, CGSU all yrs	No D/R, CGSU all yrs	D/R 2 out of 3 yrs; CGSU 1 out of 3 yrs	D/R 2 out of 3 yrs; CGSU 1 out of 3 yrs (defined livestock numbers)	none
Pickett Creek [#]	NA	No D/R, CGSU all yrs	P1, 2: D/R 1 out of 3 yrs P3, 4: D/R 2 out of 3 yrs	P1: D/R 1 out of 3 yrs P2: D/R 2 out of 3 yrs with CGSU 2 out of 3 yrs P3, 4: D/R all yrs	NA

Allotment	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
				with P3 CGSU 2 out of 3 yrs	
Quicksilver FFR***	No D/R, CGSU all yrs	NA	NA	NA	none
Red Hill [#]	NA	No D/R, CGSU all yrs	D/R 2 in 3 yrs	D/R 2 in 3 yrs (defined livestock numbers)	NA
Red Mountain**	No D/R, CGSU all yrs	NA	NA	NA	none
Stahle FFR***	No D/R, CGSU all yrs	NA	NA	NA	none
Steiner FFR	P1: No D/R, CGSU all yrs P2: D/R all yrs, CGSU all yrs	P1, 2: No D/R all yrs, no CGSU all yrs	D/R 1 out of 3 yrs	D/R 2 out of 3 yrs	none
Toy	P 1, 2: D/R most yrs, CGSU all yrs P3, 4: D/R all yrs, CGSU in P4	D/R 1 in 2 yrs	P1, 2: D/R 2 in 3 yrs P2, 3: D/R 1 in 3 yrs	D/R 2 in 3 yrs	none
West Castle	D/R all yrs	D/R all yrs	NA	D/R all yrs	none
Whitehorse/A ntelope	P1: No D/R all yrs P2, 3: D/R with some CGSU all yrs P4, 5, 6, 7: D/R all yrs	P1: No D/R all yrs P2, 3: D/R with some CGSU all yrs P4, 5, 6, 7: D/R all yrs	P1, 2, 3: D/R 1 in 3 yrs P4, 5, 6, 7: D/R all yrs, some mixed CGSU in P6, 7	P1, 2, 3: D/R 2 in 3 yrs P4, 5: D/R all yrs with CGSU 1 out of 3 yrs in P4	

D/R = deferment/rest applicable primarily to soils but also applies to vegetation when CGSU is not mentioned

CGSU = Critical Growing Season Use NA = not applicable due to allotment re-configuration; or elimination of Alt 3 (West Castle only)

*becomes part of Pickett Creek allotment in Alts 2 to 4

**pasture 1 becomes part of Fossil Creek allotment in Alts 2 to 4; pastures 2 and 3 become part of Pickett Creek allotment

*** becomes part of Red Hill FFR allotment in Alts 2 to 4

[#]newly established allotment

3.2.2.2 Environmental Consequences of Alternative 1

Alternative 1 would continue to authorize grazing under the same terms and conditions (see Section 2.2.1), acknowledging that flexibility in the established grazing schedule as recently implemented between 1997 and 2012 has led to the existing condition and would continue (Appendix B) if permitted. Grazing season of use would primarily include spring and critical-growing-season use (Table SOIL-11) and would continue to reflect existing conditions.

Table SOIL-11: Grazing rotation and generalized season of use under Alternative 1 (see impacts associated with each season of use in Table SOIL-9)

Allotment		Year 1	Year 2	Year 3
Alder Creek FFR		year-round (generally spring)		
Boone Peak		early summer to fall		
Box T	Pasture 1	summer	summer	NA
	Pasture 2	summer to fall	fall	
	Pasture 3	late summer to fall	summer	
	Pasture 4	late fall	summer to fall	

Allotment		Year 1	Year 2	Year 3
Bridge Creek		summer to fall		
Browns Creek	Pasture 1	spring to early summer	rest	
	Pasture 2	rest	spring to early summer	
Garrett FFR (all 6 pastures)		year-round		
Hart Creek	Pasture 1	spring	rest	NA
	Pasture 2	rest	spring	
	Pasture 3	spring to early summer		
Josephine FFR		year-round		
Lone Tree	Pasture 1	spring to summer		
	Pasture 2	spring to summer		
	Pasture 3	summer		
	Pastures 4, 5, 6	summer to fall		
Louisa Creek	Pasture 1	mostly spring to summer		
	Pasture 2	mostly fall		
	Pasture 3, 4, 5	summer to fall		
Meadow Creek FFR		year-round (generally summer)		
Moore FFR		year-round (generally early summer)		
Munro FFR		year-round (incidental grazing)		
Quicksilver FFR (all 3 pastures)		year-round (generally spring and/or fall)		
Red Mountain	Pasture 1	spring, fall		
	Pastures 2 & 3	spring to early summer		
Stahle FFR		year-round (generally spring)		
Steiner FFR (all 2 pastures)		year-round (generally spring to late fall)		
Toy	Pastures 1 & 2	summer		
	Pastures 3 & 4	mostly fall, some summer		
West Castle		fall to early winter		
Whitehorse/ Antelope	Pasture 1	spring		
	Pasture 2	early summer		
	Pasture 3	summer		
	Pasture 4	fall		
	Pasture 5	early fall		
	Pasture 6	summer to fall		
	Pasture 7	no data		

NA = not applicable due to 2-year rotation

The primary causes for failing to meet the Standard include spring season use during wet soil conditions and continued or past grazing during the critical growth period with minimal to no rest or deferment. The resulting adverse effects on soil stability and hydrologic function are associated with physical soil impacts and departures from expected conditions in the plant community, as previously discussed in Section 3.2.2 under existing conditions.

As shown by the declining frequency in deep-rooted bunchgrasses and overall reduced cover in the summary of data (see Appendix E; Section 3.3), continual critical-growing-season grazing has caused or contributed to a deterioration of upland soil and watershed health in many of the allotments. The RHAs and Determinations identify that 12 of the 20 Toy Mountain Group allotments do not meet ORMP objectives, and the Idaho Standards for Rangeland Health - Standard 1 for upland watersheds is not met. Five allotments do not meet the Standard due to current and past livestock grazing (Table SOIL-7); historic grazing management practices, past fires (see Map FIRE-1) or the lack thereof, and encroachment of western juniper affect six of the allotments (Table SOIL-5). One allotment is not meeting but is making significant progress toward meeting Standard 1 (Table SOIL-3).

Range readiness criteria (Appendix I) apply under Alternative 1 and protect the allotment/pasture during initial turnout when conditions can be too wet. However, if substantial precipitation occurs after turnout, the spring and early summer grazing prescribed under the alternative would have the potential for physical impacts from hoof action on wet or saturated soils. The continuous annual impacts would impair plant vigor and promote soil pugging and compaction during the wetter season. This would also increase the risk of spreading noxious weeds that often thrive when early season pugging and trampling provide establishment opportunities.

Under this alternative, the number of livestock in custodial allotments (FFRs) could vary and be increased due to flexibility in the grazing schedule. While AUMs may stay the same, grazing intensity would increase with elevated cattle numbers over a shorter amount of time and could negatively affect upland soil and watershed health.

3.2.2.3 Environmental Consequences of Alternative 2

Grazing schemes proposed by the permittees under Alternative 2 (Section 2.4; Appendix D) would generally be similar to the current management (Alternative 1) or propose increases in livestock numbers and AUMs. Thus, the impacts associated with the remaining allotments under Alternative 2 would be the same as those described above under Alternative 1 (Section 3.2.2.2). Grazing season of use would primarily include spring and critical growing season use (Table SOIL-12) and would continue to reflect existing conditions.

Table SOIL-12: Alternative 2 grazing rotation and generalized season of use (see impacts associated with each season of use in Table SOIL-9)

Allotment*		Year 1	Year 2	Year 3
Alder Creek FFR		spring and summer		
Boone Peak		now Pickett Allotment Pasture 4		
Box T	Pasture 1	summer (occasional fall)		
	Pasture 2	summer to late fall (occasional all season use)		
	Pasture 3	summer (occasional late fall)		
	Pasture 4	summer to late fall (occasional spring)		
Bridge Creek		now Pickett Allotment Pasture 3		
Browns Creek	Pasture 1	spring to early summer	rest	
	Pasture 2	rest	spring to early summer	
Fossil Creek (former Red Mountain P1)		year-round		
Garrett FFR (all 6 pastures)		year-round		
Hart Creek	Pasture 1	spring	rest	NA
	Pasture 2	rest	spring	
	Pasture 3	spring and early summer	spring and early summer	
Josephine FFR		year-round		
Lone Tree	Pasture 1	spring to summer (occasional fall)		
	Pasture 2	spring to summer (occasional fall)		
	Pasture 3, 4, 5	summer to fall		
	Pasture 6	fall (occasional spring)		
Louisa Creek	Pasture 1	spring	fall	NA
	Pastures 2 & 6	fall	spring	
	Pasture 3, 4, 5	summer	summer	
	Pasture 6	fall	spring	
Meadow Creek FFR		early summer to early winter		

Allotment*		Year 1	Year 2	Year 3
Moore FFR		early summer to late fall		
Munro FFR		spring to early winter		
Pickett Creek (former Bridge Ck. Boone Pk, and Red Mountain P2 & 3) – all 4 pastures		year-round		
Quicksilver FFR		now Red Hill FFR Ps 1, 2, and 3		
Red Hill FFR (former Quicksilver FFR and Stahle FFR) – all 4 pastures		year-round		
Red Mountain	Pasture 1	now Fossil Creek		
Red Mountain	Pasture 2	now Pickett Creek Pasture 1		
	Pasture 3	now Pickett Creek Pasture 2		
Stahle FFR		now Red Hill FFR P4		
Steiner FFR (P1 & 2)		year-round		
Toy	Pasture 1	spring to summer (occasional fall)		
	Pasture 2	spring to summer (occasional fall)		
	Pasture 3	spring to summer		
	Pasture 4	spring to late fall (variable in 3 Sections of pasture)		
West Castle		fall to late winter		
Whitehorse/Antelope	Pasture 1	spring		
	Pasture 2	early summer		
	Pasture 3	summer		
	Pasture 4	fall		
	Pasture 5	early fall		
	Pasture 6	summer to fall		
	Pasture 7	fall		

NA = not applicable due to 2-year rotation *FFRs may show a defined season but use is always year-round at the discretion of the permittee

In general, livestock grazing in the Toy Mountain Group allotments occurs during the wet spring months and the critical growing season, with limited to no periodic rest. These factors deteriorate upland soil and watershed health because they increase physical impacts to soils in the spring and early summer from hoof action and decrease the ability of native plant communities to remain healthy, vigorous, and productive during active growth.

Where soil impacts currently exist as outlined in the Affected Environment Section, effects as described in Impacts to Soils Common to All Grazing Alternatives (Section 3.2.2.1) apply, with little to no change in place to improve resource values and to provide opportunity for recovery over the life of the permit. In the absence of changing seasonal use or reducing AUMs, progress toward improved soil and upland watershed resource issues and associated impacts is not expected to allow for an upward trend to positively affect soil stability, productivity, and hydrologic function over the short and long term. Where active AUMs are reduced, improvements may be possible but often remain too small to make significant progress in the absence of rest and/or deferment.

3.2.2.4 Environmental Consequences of Alternative 3

Alternative 3 would generally improve existing condition when compared to Alternative 1, in part by incorporating grazing schedules for the Toy Mountain Group (Section 2.2.3) that would defer or rest grazing for a minimum of one critical growing season of use in the rotation (Table SOIL-13). Under the grazing scheme proposed in Alternative 3 (Section 2.2.3), 12 of the 20 allotments that are part of Alternative 3 do not meet upland watershed Standard 1 (Tables Soil-3, 5, and 7) and would be subject to the impacts described in Table SOIL-9. The impacts would vary according to the season of use.

Table SOIL-13: Alternative 3 grazing rotation and generalized season of use (see impacts associated with each season of use in Table SOIL-9)

Allotment		Year 1	Year 2	Year 3
Alder Creek FFR		spring to early winter	summer to early winter	spring to early summer; fall to early winter
Boone Peak		now Pickett Allotment Pasture 4		
Box T	Pasture 1	fall	summer	summer
	Pasture 2	summer and fall	fall	summer to early fall
	Pasture 3	summer	summer to early fall	fall
	Pasture 4	summer	late fall	late fall
Bridge Creek		now Pickett Allotment Pasture 3		
Browns Creek	Pasture 1	spring to early summer	rest	NA
	Pasture 2	rest	spring to early summer	
Fossil Creek (former Red Mountain P1)		spring; fall through winter	spring	fall through late winter
Garrett FFR	Pasture 1	spring to early winter	spring to early winter	summer to early winter
	Pasture 2	spring to early winter	spring to early winter	fall to early winter
	Pasture 3	spring to early winter	spring to early winter	summer to early winter
	Pasture 4	fall to early winter	spring to early winter	spring to early winter
	Pasture 5	summer to early winter	spring to early winter	spring to early winter
	Pasture 6	spring to early winter	fall to early winter	spring to early winter
Hart Creek	Pasture 1	spring	rest	spring
	Pasture 2	rest	spring	spring
	Pasture 3	spring	spring	rest
Josephine FFR		spring to early winter	spring to early winter	summer to early winter
Lone Tree	Pasture 1	spring to summer	fall	NA
	Pasture 2	spring to summer	fall	
	Pasture 3	summer	summer to early fall	
	Pasture 4	summer to early fall	summer	
	Pasture 5	fall	summer	
	Pasture 6	fall	spring	
Louisa Creek	Pasture 1	spring to early summer	spring to early summer	fall
	Pasture 2	fall	fall	spring
	Pasture 3	summer	summer	summer
	Pasture 4	summer to early fall	summer to early fall	summer to early fall
	Pasture 5	summer to early fall	summer to early fall	summer to early fall
	Pasture 6	fall	fall	spring
Meadow Creek FFR		spring to late fall	spring to late fall	summer to late fall
Moore FFR		summer to late fall	summer to late fall	fall
Munro FFR		spring to fall	spring to fall	fall
Pickett Creek (former Bridge Ck., Boone Pk., and Red Mtn. P2 & 3)	Pasture 1	spring	spring	rest
	Pasture 2	summer	rest	spring
	Pasture 3	rest	summer	summer
	Pasture 4	summer to fall	summer to fall	fall
Quicksilver FFR		now Red Hill FFR Ps 1, 2, and 3		
Red Hill FFR (former Quicksilver FFR and Stahle FFR)	Pasture 1	spring to early winter	spring to early winter	summer to early winter
	Pasture 2	spring to early winter	fall to early winter	spring to early winter
	Pasture 3	spring to early winter	summer to early winter	spring to early winter
	Pasture 4	summer to early winter	spring to early winter	spring to early winter
Red Mountain	Pasture 1	now Fossil Creek		
Red Mountain	Pasture 2	now Pickett Creek Pasture 1		
	Pasture 3	now Pickett Creek Pasture 2		
Stahle FFR		now Red Hill FFR P4		
Steiner FFR	Pasture 1	spring to late fall	summer to late fall	spring to early summer; fall
	Pasture 2	summer to late fall	spring to late fall	spring to late fall
Toy	Pasture 1	spring to summer	fall	fall

Allotment		Year 1	Year 2	Year 3
	Pasture 2	spring to summer	fall	fall
	Pasture 3	fall	spring to summer	spring to summer
	Pasture 4	fall	spring to summer	spring to summer
West Castle		fall to early winter		
Whitehorse/ Antelope	Pasture 1	spring	spring	fall
	Pasture 2	spring	fall	spring
	Pasture 3	fall	spring	spring
	Pasture 4	summer	rest	fall
	Pasture 5	fall	fall	rest
	Pasture 6	rest	summer	summer
	Pasture 7	summer	fall	fall

NA = not applicable due to 2-year rotation

Incorporation of a deferred season of use or rest would lessen livestock impacts on upland soils in the allotments. This would allow for increased recovery and maintenance of bunchgrasses, which in turn promotes soil stability and hydrologic function. Where active AUMs have also been reduced (Appendix C), additional improvements to watershed health are expected and would promote vegetation soil cover, decrease bare ground, and generally reduce the susceptibility to accelerated erosion and impacts to biological soil crusts. When grazing in riparian areas during the height of the summer is eliminated, reduced livestock congregation along nearby uplands would lessen potential sediment movement into streams from concentrated use.

Range readiness criteria (Appendix I) apply under Alternative 3 to protect the allotment/pasture during initial turnout, although the potential of physical impacts from hoof action on wet or saturated soils is possible if substantial precipitation occurs at a later time. However, the deferment or rest year(s) would allow for recovery potential, promote plant vigor, and reduce impacts from soil pugging and compaction during the wetter season compared to Alternative 1. This would also reduce the risk of spreading noxious weeds that often thrive when early-season pugging and trampling provide for favorable seedbeds. Pastures or allotments that avoid spring grazing would benefit the most (Table SOIL-13).

As a result, soil stability, productivity, hydrologic function, nutrient cycling, and energy flow would be positively affected over the short and long term and provide an opportunity to enhance ecological function and site potential to upland soil and watershed conditions. This would allow for an upward trend over the life of the permit, though not as consistently as Alternatives 4 and 5.

3.2.2.5 Environmental Consequences of Alternative 4

The leading difference between Alternative 4 and Alternative 1 for the Toy Mountain Group is the incorporation of grazing schedules that would rest or defer grazing outside of spring and critical growing season use more often than any other grazing alternative considered, generally for a minimum of 2 years within a 3-year rotation (Section 2.2.4; Table SOIL-14). Under the grazing scheme proposed in Alternative 4 (Section 2.2.4), 12 of the 20 allotments that are part of Alternative 4 do not meet upland watershed Standard 1 (Tables SOIL-3, 5, and 11) and would be subject to the impacts described in Table SOIL-9. The impacts would vary according to the season of use.

Table SOIL-14: Grazing rotation and generalized season of use under Alternative 4 (see impacts associated with each season of use in Table SOIL-9)

Allotment		Year 1	Year 2	Year 3
Alder Creek FFR		fall to early winter	fall to early winter	spring to early summer
Boone Peak		now Pickett allotment Pasture 4		
Box T	Pasture 1	fall	fall	summer
	Pasture 2	summer to fall	summer to fall	summer to fall

Allotment		Year 1	Year 2	Year 3
	Pasture 3	summer	fall	fall
	Pasture 4	rest	summer	fall
Bridge Creek		now Pickett Allotment Pasture 3		
Browns Creek	Pasture 1	fall to early summer	rest	rest
	Pasture 2	rest	fall to early summer	rest
Fossil Creek (former Red Mountain P1)		fall to late winter spring	fall to early winter	fall to late winter
Garrett FFR	Pasture 1	spring to early winter	summer to early winter	summer to early winter
	Pasture 2	fall to early winter	spring to early winter	fall to early winter
	Pasture 3	spring to early winter	summer to early winter	summer to early winter
	Pasture 4	fall to early winter	fall to early winter	fall to early winter
	Pasture 5	summer to early winter	spring to early winter	summer to early winter
	Pasture 6	fall to early winter	fall to early winter	spring to early winter
Hart Creek	Pasture 1	spring to summer	rest	rest
	Pasture 2	rest	spring to summer	rest
	Pasture 3	rest	rest	spring to summer
Josephine FFR		spring to early winter	summer to early winter	summer to early winter
Lone Tree	Pasture 1	spring to summer	fall	fall
	Pasture 2	spring to summer	fall	fall
	Pasture 3	summer	summer	summer to fall
	Pasture 4	rest	spring to summer	rest
	Pasture 5	fall	fall	summer
	Pasture 6	fall	rest	spring to early summer
Louisa Creek	Pasture 1	spring to early summer	fall	rest
	Pasture 2	summer	spring to early summer	fall
	Pasture 3	fall	rest	sprint to early summer
	Pasture 4	summer to late fall	summer to late fall	summer to late fall
	Pasture 5	summer to late fall	summer to late fall	summer to late fall
	Pasture 6	rest	spring	fall
Meadow Creek FFR		summer to late fall	summer to late fall	spring to late fall
Moore FFR		summer to fall	fall	fall
Munro FFR		spring to fall	fall	fall
Pickett Creek (former Bridge Ck., Boone Pk., and Red Mtn. P2 & 3)	Pasture 1	spring	rest	rest
	Pasture 2	rest	spring	rest
	Pasture 3	rest	rest	spring
	Pasture 4	fall	fall	fall
Quicksilver FFR		now Red Hill FFR Ps 1, 2, and 3		
Red Hill FFR (former Quicksilver FFR and Stahle FFR)	Pasture 1	summer to early winter	summer to early winter	spring to early winter
	Pasture 2	spring to summer	summer to early winter	fall to early winter
	Pasture 3	summer to early winter	spring to early winter	summer to early winter
	Pasture 4	spring to early winter	summer to early winter	summer to early winter
Red Mountain	Pasture 1	now Fossil Creek		
Red Mountain	Pasture 2	now Pickett Creek Pasture 1		
	Pasture 3	now Pickett Creek Pasture 2		
Stahle FFR		now Red Hill FFR P4		
Steiner FFR	Pasture 1	fall	fall	spring to early summer; fall
	Pasture 2	spring to late fall	summer to late fall	summer to late fall
Toy	Pasture 1	spring to early summer	fall	fall
	Pasture 2	fall	spring to early summer	fall
	Pasture 3	fall	spring to early summer	fall
	Pasture 4	fall	fall	spring to early summer
West Castle		fall to early winter		
Whitehorse/ Antelope	Pasture 1	rest	spring	fall
	Pasture 2	fall	rest	spring
	Pasture 3	spring	summer	rest
	Pasture 4	summer	fall	rest
	Pasture 5	summer	rest	rest

Allotment		Year 1	Year 2	Year 3
	Pasture 6	rest	rest	summer
	Pasture 7	fall	summer	fall

Alternative 4 would make the most significant progress toward desired conditions compared to previous grazing alternatives for allotments that are not meeting due to livestock grazing. While Alternative 3 provides for improved watershed function through seasonal deferment for 2 consecutive years within a 3-year rotation, Alternative 4 also periodically incorporates rest for some allotments. The shorter grazing seasons and reduced critical-growth-period grazing often result in a reduction of livestock numbers and active AUMs (Appendix C).

Implementation of increased rest and/or periodic deferment outside of critical-growing-season use is expected to increase or maintain vegetative vigor of native perennial bunchgrasses. This would positively affect soils because improved upland vegetation communities provide added soil stability, hydrologic function, litter, and nutrients. The restricted seasons, compared to Alternative 1, would often result in a decrease in active AUMs over the life of the permit (Appendix C) so that upland plant communities would have an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion.

Adjustments in seasonal use would also reduce grazing in riparian areas during the height of the summer and move grazing into the later summer and fall season, generally 2 out of 3 years. This would benefit soils by reducing livestock congregation along nearby uplands that could otherwise promote sediment movement into streams from concentrated physical impacts and over-utilization of available vegetation.

Range readiness criteria (Appendix I) apply under Alternative 4 to protect the allotment/pasture during initial turnout although the potential of physical impacts from hoof action on wet or saturated soils is possible should substantial precipitation occur at a later time. However, the additional rest and deferment years would increase opportunities to promote plant vigor and reduce impacts from soil pugging and compaction during the wetter season compared to Alternatives 1, 2, and 3. This would also reduce the risk of spreading noxious weeds that often thrive when early-season pugging and trampling provide for favorable seedbeds. Pastures or allotments that avoid spring grazing would benefit the most (Table SOIL-14).

As a result, soil stability, productivity, hydrologic function, nutrient cycling, and energy flow would be positively affected over the short and long term and provide an opportunity to enhance ecological function and site potential to upland soil and watershed conditions. This would allow for a greater opportunity for upward trend over the life of the permit compared to the previous alternatives.

3.2.2.6 Environmental Consequences of Alternative 5

Under Alternative 5, the elimination of livestock impacts would permit the unhindered expansion of the existing vegetation cover. Soil conditions would positively change over time more than under any of the other alternatives, though recovery would depend on soil and site characteristics, including capability of existing plant communities, and may not be immediately evident in all locations.

Natural processes of recovery would be achieved through cycles of wetting and drying, shrinking and swelling, freeze and thaw, root growth, and bioturbation of compacted layers. Plant canopies and root masses would fully enlarge and plant litter would accumulate on soil surfaces where additional soil organic matter and biological soil crust protects against the effects of wind and water erosion.

Additional fuel availability from the build-up of litter and plant expansion would combine to form a

more continuous fuel for wildfires than under Alternative 1 or any of the other alternatives. Under these conditions, fire in allotments with extensive invasive annual monocultures could be more difficult to contain and control than at present. The probability of extensive, stand-replacing fires increases and could adversely impact soils and upland watershed function.

Suspending livestock grazing for 10 years would eliminate physical soil impacts from hoof action, improve the vegetative cover and microbiotic soil development, and promote recovery and upland watershed health. Livestock trailing, however, would occur every year as needed and is not dependent on whether an allotment is rested during the time of trailing. Where allotments or pastures are identified to not meet or to be at risk from juniper encroachment (Table SOIL-1 and 7), they have the potential to show ongoing declines in soil and hydrologic function or could move from meeting to not meeting in the future. As a whole, the allotments would make general progress toward meeting or continuing to meet Rangeland Health Standard 1 and ORMP soil objectives as a result of eliminating grazing use and allow for maintenance or an upward trend over the life of the permit that would positively affect soil stability, productivity, and hydrologic function over the short and long term.

3.2.3 Riparian/Water Quality

3.2.3.1 Environmental Consequences Common to All Alternatives

Analyses of the alternatives are based on the consequences of seasons and intensities of livestock grazing use (Appendix B) that have led to the current conditions for the riparian areas and water quality as discussed above in the Affected Environment Section 3.1.3. Consequently, Alternatives 2 through 5 were compared with Alternative 1 (current condition) to assess the different level of effects on riparian area conditions and water quality. The following section provides introductory concepts and general impacts for expected effects resulting from livestock management practices that are common to all grazing alternatives. Specific environmental consequences from direct and indirect effects of the individual alternatives, as they apply to the 20 Toy Mountain Group allotments, are discussed in Sections 3.2.3.2 through 3.2.3.6.

Direct and Indirect Effects - Introductory Information

The term *riparian* denotes both a landscape position and a specific type of ecosystem; riparian areas are located next to a body of water or wetland. Riparian areas are widely recognized as the most biologically diverse and productive of all ecosystems (Kauffman, Krueger, & Vavra, 1984) (Powell, Cameron, & Newman, 2000). Riparian areas filter sediment, stabilize soil and stream banks, regulate water temperature and flow, and provide many significant habitat attributes for terrestrial and aquatic wildlife (Stevens, McArthur, & Davis, 1992). Because they generally offer gentle slopes, cool microclimate, available water, and abundant forage, livestock often concentrate in riparian areas (Powell, Cameron, & Newman, 2000).

The riparian areas that occur within the allotments have both structural and functional diversity; thus, there is a need to characterize and quantify the effects of grazing management practices on the stream and spring riparian communities and the maintenance of hydrologic systems. The impacts common to all of the grazing alternatives depending on season of use (Table RIPN-7) are shown below (Table RIPN-8). The impacts discussed below under each alternative focus primarily on differences among season of use because there is no conclusive evidence and information is speculative regarding impacts on riparian-wetland areas from livestock numbers (Powell, Cameron, & Newman, 2000).

The streams and springs that occur within the allotments are unique in their particular setting: stream characteristics, valley bottom-type and soils, potential vegetation, relationship to upland topography and

vegetation. Therefore, each area will require a unique strategy to accomplish desired conditions and meet objectives. There are no one-size-fits-all prescriptions for livestock grazing in riparian areas; however, authors agree that any successful grazing strategy will, at a minimum:

- Limit grazing intensity and season of use to provide sufficient rest to encourage plant vigor, regrowth, and energy storage;
- Ensure sufficient vegetation during periods of high flow to protect stream banks, dissipate energy, and trap sediments; and
- Control the timing of grazing to prevent damage to stream banks when they are most vulnerable to trampling.

Table RIPN-7: Grazing rotation and season of use associated with all alternatives within each Toy Mountain Group 3 allotment (see impacts for each season of use in Table RIPN-8)

Allotment & Pasture	Alternative¹	Alternative 2²	Alternative 3	Alternative 4	Alternative 5
Alder Creek	year-round (all yrs)	spring & early summer (all yrs)	summer & fall (2 yrs), spring + fall (1 yr)	fall (2 yrs), spring (1 yr)	none
Boone Peak	summer & fall (all yrs)	see Pickett Creek allotment			none
Box T	P³1: summer (all yrs) P²2-4: summer & fall (all yrs)	P¹1,3: summer (all yrs) P²2,4: summer & fall (all yrs)	P¹1, 3: summer (1 yr) fall (2 yrs) P⁴4: summer (1 yr), fall (2 yrs)	P1-3: summer (1yr), rest (1 yr), fall (1 yr)	none
Bridge Creek	summer & fall (all yrs)	see Pickett Creek allotment			none
Browns Creek	spring (1yr), rest (1 yr)	spring (1yr), rest (1 yr)	spring (1yr), rest (1 yr)	spring (1yr), rest (2 yrs)	none
Fossil Creek (pasture 1 of Red Mnt.)	see Red Mnt	year-round (all yrs)	spring, fall, & winter (all yrs)	spring, fall, & winter (1 yr), fall & winter (2 yrs)	none
Garrett FFR	winter (all yrs)	winter (all yrs)	P 2,4,6: spring, summer, & fall (2yrs), fall (1yr)	P²2, 6: spring, summer, & fall (1 yr), fall (2yrs), P⁴4: fall (all yrs)	none
Hart Creek	P 1, 2: spring (1 yr), rest (1 yr) P³3: spring & early summer (all yrs)	P¹1,2: spring (1yr), rest (1 yr) P³3: spring (all yrs)	P¹1,2: spring (1yr), rest (1 yr) P³3: spring (all yrs)	spring & early summer (1yr), rest (2 yrs)	none
Josephine FFR	NA				none
Lone Tree	P¹1 (2): spring (all yrs) P⁴4,6: summer & fall (all yrs)	P¹1 (2): spring (all yrs) P⁴4: summer & fall (all yrs) P⁶6: fall (all yrs)	P¹1 (2): spring (1 yr), fall (1 yr) P⁴4: summer (1 yr), summer & early fall (1 yr) P⁶6: spring (2 yr), fall (1 yr)	P¹1 (2): spring (1 yr), fall (2 yrs) P⁴4: spring (1 yr), rest (2 yrs) P⁶6: fall (1 yr), spring (1 yr), rest (1 yr)	none
Louisa Creek	P¹1,2,6: spring (1 yr), fall (1 yr) P³3: summer & fall (all yrs)	P¹1,2,6: spring (1 yr), fall (1 yr) P³3: summer & fall (all yrs)	P¹1,2,6: spring (1 yr), fall (1 yr) P³3: summer (1 yr), summer & fall (1 yr)	P¹1,2,3,6: spring & early summer (1 yr), fall (1 yr), rest (1 yr)	none

Allotment & Pasture	Alternative ¹	Alternative 2 ²	Alternative 3	Alternative 4	Alternative 5
Meadow Creek FFR	NA				none
Moore FFR	year-round (all yrs)	summer & fall (all yrs)	summer & fall (2 yrs), fall (1 yr)	summer & fall (1 yr), fall (2 yrs)	none
Munro FFR	year-round (all yrs)	spring, summer, & fall (all yrs)	spring, summer, & fall (1 yr), summer & fall (1 yr), fall (1 yr)	spring, summer, & fall (1 yr), fall (2 yrs)	none
Pickett Creek (combines pastures 2 & 3 of Red Mnt, Bridge Ck, and Boone Pk)	see Red Mnt, Boone Peak, and Bridge Creek	year-round (all yrs)	P1: spring (2 yrs), rest (1yr) P2: spring (1 yr), summer (1 yr), rest (1 yr) P3: summer (2 yrs), rest (1 yr) P4: summer & fall (2 yrs), fall (1 yr)	P1: spring (1 yr), rest (2yrs) P2, 3: spring & early summer (1 yr), rest (2 yrs) P4: fall (all yrs)	none
Quicksilver FFR (pst 2 only)	year-round (all yrs)	see Red Hill allotment			none
Red Hill (pst 2 only)	see Quicksilver FFR and Stahle FFR	Year-round (all yrs)	summer & fall (2 yrs), spring & fall (1 yr)	spring (1 yr), summer & fall (1 yr), fall (1 yr)	none
Red Mountain	P1: spring & fall (all yrs) P2,3: spring (all yrs)	see Fossil Creek and Pickett Creek allotments			none
Stahle FFR	NA				none
Steiner FFR	year-round (all yrs)	year-round (all yrs)	spring, summer, & fall (1 yr), summer & fall (1 yr), spring & fall (1 yr)	fall (2 yrs), spring & fall (1 yr)	none
Toy	spring & early summer (1 yr), fall (1 yr)	spring & early summer (1 yr), fall (1 yr)	P1,2: spring & early summer (1 yr), fall (2 yrs) P3,4: spring & early summer (2 yrs), fall (1 yr)	spring & early summer (1 yr), fall (2 yrs)	none
West Castle	fall (all yrs)	fall & winter (all yrs)	NA	fall (all yrs)	none
Whitehorse/Antelope	P1: spring (all yrs) P2,3: summer (all yrs) P4,5: fall (all yrs) P6: summer & fall (all yrs) P7: rest (all yrs)	P1: spring (all yrs) P2,3: summer (all yrs) P4,5,7: fall (all yrs) P6: summer & fall (all yrs)	P1,2: spring (2 yrs), fall (1 yr) P3: spring & early summer (2 yrs, fall (1 yr) P4: summer (1 yr), fall (1 yr), rest (1 yr) P5: fall (2 yrs), rest (1 yr) P6: summer (2 yrs), rest (1 yr) P7: summer (1 yr), fall (2 yrs)	P1,2: spring (1 yr), fall (1 yr), rest (1 yr) P3: spring & summer (1 yr), summer & fall (1 yr), rest (1 yr) P4: summer (1 yr), fall (1 yr), rest (1 yr) P5: fall (1 yr), rest (2 yrs) P6: summer & early fall (1 yr),	none

Allotment & Pasture	Alternative¹	Alternative 2²	Alternative 3	Alternative 4	Alternative 5
				rest (2 yrs) P7: summer (1 yr), fall (2 yrs)	

¹The seasons of use represent the current situation; for details regarding recent actual use, see Appendix C-2 and Appendix B

²For details on the permittees' applications see Section 2.2 and Appendix D

Table RIPN-8: Effects of livestock grazing on aquatic and riparian habitats by alternative and season of use (Adapted from (Bellows, 2003) and (Belsky, Matzke, & Uselman, 1999))

Alternative(s)	Season of Use	Issue	Impacts (P denotes primary impact and S denotes secondary set of impacts)
1, 2, 3, and 4	Spring (March- May)	Soil compaction	P Increased erosion P Sediment loading of riparian areas and streams S increased flooding S reduced groundwater recharge S lowered water table S increase stream bank erosion S removal of submerged vegetation S reduced aquatic habitat S reduced fish spawning habitat P Decreased herbaceous cover P Decreased species and age diversity S less shade and higher stream temperatures S decrease in stream bank stability S less sediment trapping S decreased water infiltration S impaired aquatic and fish habitat
1, 2, 3, and 4	Summer (June- Aug.) Fall (Sep.-Nov.) *these impacts are in addition to those listed under all seasons	Browsing on trees and shrubs	P Decreased tree and shrub cover S decline in stream bank stability S less shade and higher stream temperatures S loss of wildlife habitat S impaired fish habitat
1 and 2	Season Long (March- Sept) *includes all of the impacts described in the spring, summer, and fall Sections as well as 'Continuous Grazing'	Continuous grazing	P Decreased species and age diversity P Decreased herbaceous cover S less shade and higher stream temperatures S decrease in stream bank stability S less sediment trapping S decreased water infiltration S impaired aquatic and fish habitat
1, 2, 3, and 4	All Seasons	Loss of herbaceous vegetation Loss of stream bank stability	P Decreased stream bank stability P Change in channel shape, structure, and form S Reduced water infiltration S increased runoff

Alternative(s)	Season of Use	Issue	Impacts (P denotes primary impact and S denotes secondary set of impacts)
		<p>Manure deposition in and near streams</p> <p>In-stream trampling and congregation</p>	<p>S increased water velocity</p> <p>S increased flooding</p> <p>S reduced groundwater recharge</p> <p>S lowered water table</p> <p>S increased stream bank erosion</p> <p>S removal of submerged vegetation</p> <p>S reduced aquatic habitat</p> <p>S reduced fish spawning habitat</p> <p>P Nutrients, pathogens, and bacteria additions</p> <p>P Sediment loading of riparian areas and streams</p> <p>S increased water temperature</p> <p>S reduced habitat quality for fish and aquatic species</p> <p>S increase in nutrients and pathogens from manure</p> <p>S human health impacts</p>

Impacts Associated with Season of Use

Spring (March-May)

Adverse impacts from spring use are the result of grazing when soils are typically wet. The static load of a cattle hoof is reported to range from 2.8 to 10.9 kg/cm² and can increase by two to four times when the animal travels (Powell, Cameron, & Newman, 2000); thus, when the soils are saturated, the physical damage to the stream banks increase. The increased soil compaction causes an increase in erosion and sediment loading that could impair water quality and thus fish and aquatic habitat.

Additionally, during the spring months as herbaceous vegetation is growing and green, livestock selectively graze on the most palatable species. This could lead directly to both decreased herbaceous cover and decreased species and age diversity. The loss of herbaceous cover indirectly causes less shade and higher stream temperatures, a decrease in stream bank stability, less sediment trapping, decreased water infiltration, and thus impaired aquatic and fish habitat (Bellows, 2003), (Belsky, Matzke, & Uselman, 1999).

Summer (June-August)

Livestock grazing during the summer months creates both direct and indirect impacts. Because upland grasses are often dry and temperatures are warmer during the summer months, livestock make disproportionate use of riparian areas and riparian herbaceous vegetation is preferred (Powell, Cameron, & Newman, 2000), (Bailey & Brown, 2011). Once the riparian herbaceous vegetation is used to a level ranging from 45 to 90 percent, willows and other riparian shrubs are browsed at various levels. If both the herbaceous and shrub cover decline, a compounding set of impacts can occur: because shade has been reduced, water temperatures increase; vegetative structure and cover for fish and wildlife is lost; stream bank stability decreases increasing erosion, sediment, and stream velocity; a loss of hydric, deep-rooted species that aid in bank stability occurs; and riparian plant species may be replaced by weedy and/or upland plant species (Green & Kauffman, 1995), (Belsky, Matzke, & Uselman, 1999).

Additionally, when riparian areas are grazed during the growing season, livestock congregate close to water where it is cooler and the forage is more palatable (Bryant, 1982), (Smith, Rodgers, Dodd, & Skinner, 1992), (Liggins, 1999). Once livestock have congregated along the floodplain, in riparian-wetland areas, and in the stream channel, further impacts associated with stream bank trampling (Kauffman, Krueger, & Vavra, 1984), soil compaction (Marlow & Pogacnik, 1985), and water quality (Taylor, Gillman, & Pendretti, 1989) occur (Table RIPN-26). In-stream trampling, disturbance and erosion from denuded banks, reduced sediment trapping by vegetation, loss of bank stability, and increased peak flows lead to reduced habitat quality for both fish and aquatic species, reduced infiltration, and lowered water tables (Stevens, McArthur, & Davis, 1992). An increase in soil compaction created by congregated livestock causes an increase in erosion, decreased water infiltration rates and more runoff, reduced plant productivity and thus less vegetative cover (Clary, 1995). Finally, impacts associated with water quality include a potential increase in nutrient concentrations, bacteria, sediment, and water temperatures. Direct fecal deposition into and near water, runoff from disturbed stream banks, and hoof churn-up of contaminated sediments increase nutrient and bacteria concentrations (Taylor, Gillman, & Pendretti, 1989).

In semi-arid rangelands where forage growth is limited primarily by precipitation, ensuring that riparian area grazing does not occur during the critical late summer period may be more beneficial than rotational systems that defer livestock use throughout the grazing season (Bailey & Brown, 2011). Since the Toy Mountain Group allotments occur in an arid region, Alternatives 1-4 discuss both scenarios.

Fall (September-November)

Where woody species occur, fall grazing increases the occurrence of browse on woody riparian species because both upland and riparian herbaceous forage have dried and/or been used (Elmore W. , 1994). The amount of time available for both herbaceous and woody species regrowth would be reduced. For example, a study in eastern Oregon showed that the density of cottonwood saplings and the height of both cottonwood and willows increased significantly within a gravel bar community after 2 years of rest (Kauffman, Krueger, & Vavra, 1984).

During the fall season, vegetation growing in the riparian zones is generally more palatable and of higher nutritive quality than the upland vegetation. Kauffman and others (1984) found that once the herbaceous component of the riparian area was reduced, a definite shift to less-palatable species occurs. In their study, the composition of woody species was higher in ungrazed compared to grazed areas in a wet meadow community, and plant dormancy occurred up to 2 weeks later in the ungrazed areas. Similarly, (Holland, Leininger, & Trilica, 2005) found that recent grazing exclusion resulted in an increase in canopy cover, height growth, and stem density during the 11 years of a study in Colorado, indicating that these variables respond positively to removal of livestock grazing.

A fall system of grazing would be beneficial for the improvement of the riparian areas when stream bank temperatures are cool enough to discourage animals from congregating in the riparian areas (Bellows, 2003). Additionally, in areas that are not saturated late in the season, the potential for compaction damage and the physical damage to the soils would be reduced.

Rest (non-use)

Rest would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community. Information is lacking on the length of rest required for recovery of riparian vegetation; however, shrubs often require longer periods of recovery than herbaceous vegetation (Powell, Cameron, & Newman, 2000). Improvement in stream channel form and function would only occur if the channel is at a stage where improvement is possible; for example, downcut systems would need to reach a new base level and widening would have to occur to allow vegetation establishment sufficient to resist higher flows (Leonard & Karl, 1995). Research has found that in ungrazed areas, streams experienced decreased widths and depths (Clary, 1999), vegetation cover increased two-fold, stream bank stability increased by 50 percent (Scrimgeour & Kendall, 2002), and stream bank erosion was 3.3 times less in an ungrazed area compared to an area grazed at a moderate stocking rate and level of use (Kauffman, 1982).

Trailing

Effects to riparian areas and water quality as analyzed in the 2012 Trailing EA (USDI BLM, 2012b), and the 2012 Chipmunk Group 2 EIS (USDI BLM, 2012a) are applicable and provide the background for the affected Toy Mountain Group allotments (see Livestock Trailing Section 2.1.3; Map RNGE-2).

The majority of trailing along approximately 85 miles would occur along established paved, gravel, or native surface roads and their associated borrow ditches, with the remaining miles occurring on cross-country or unknown surface trailing routes. The impacts of all of the routes that occur within the Toy Mountain Group allotments have been previously analyzed, with the exception of approximately 6.0 miles of cattle trailing routes through portions of the Browns Creek, Hart Creek, West Castle, and Whitehorse/Antelope allotments (Map RNGE-2) were not analyzed in that EA and are therefore discussed here.

Animals may spread out up to one-eighth of a mile on each side of the routes (total ¼-mile width), potentially impacting streams and springs they cross once or several times over each route within a year.

Since trailing would be authorized regardless of an allotment/pasture's scheduled rest or deferment, the effects specific to the affected allotments would be the same for Alternatives 1-4. Approximately 6.0 miles of two unnamed ephemeral tributaries would fall within the trailing buffer. Thus, short-duration impacts would occur in the form of vegetation removal and trampling. Overall, effects on riparian areas and water quality due to trailing are minor because they affect a relatively small proportion of the landscape and livestock do not congregate on the streams and springs. Trailing on the existing roadways greatly reduces impacts to riparian areas and water quality.

3.2.3.2 Environmental Consequences of Alternative 1

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.3.1. Any additional specific effects from this alternative will be described below by allotment.

Under the grazing scheme proposed in Alternative 1 (for details see Section 2.2.1), 17 of the Toy Mountain Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-8. The impacts would vary according to the season of use (Table RIPN-9).

Table RIPN-9: Grazing rotation, season of use, and stream mileage and number of springs impacted under Alternative 1 for the Group 3 allotments

Allotment/Pasture that contains Riparian Areas	Season of Use	Perennial Miles	Intermittent Miles ¹	Number of Springs
Alder Creek	year-round (all yrs)	0.7	0.1	0
Boone Peak	summer & fall (all yrs)	2.8	13.3	6
Box T				
Pasture 1	summer (all yrs)	0.9	4.1	6
Pasture 2	summer & fall (all yrs)	0.1	4.4	0
Pasture 3	summer & fall (all yrs)	1.5	1.1	0
Pasture 4	summer & fall (all yrs)	0	2.5	8
Bridge Creek	summer & fall (all yrs)	1.3	5.1	0
Brown's Creek				
Pasture 1	spring (1 yr), rest (1 yr)	0.1	13.6	0
Pasture 2	spring (1 yr), rest (1 yr)	0	6.2	0
Garrett FFR				
Pasture 2	winter (all yrs)	0.2	0.1	0
Pasture 4	winter (all yrs)	0.4	0.7	0
Pasture 6	winter (all yrs)	0.7	0.5	0
Hart Creek				
Pasture 1	spring (1 yr), rest (1 yr)	2.9	24.5	0
Pasture 2	spring (1 yr), rest (1 yr)	0	34.5	0
Pasture 3	spring & early summer (all yrs)	0	22.4	4
Josephine FFR	NA			
Lone Tree				
Pasture 1 (2)	spring (all yrs)	4.2	6.8	0
Pasture 4	summer, & fall (all yrs)	1.0	0	0
Pasture 6	summer, & fall (all yrs)	1.5	3.6	0
Louisa Creek				
Pasture 1	spring (1 yr), fall (1 yr)	0.8	4.8	1
Pasture 2	spring (1 yr), fall (1 yr)	0	2.6	0
Pasture 3	summer & fall (all yrs)	2.7	9.0	0
Pasture 6	spring (1 yr), fall (1 yr)	0.6	2.1	0

Allotment/Pasture that contains Riparian Areas	Season of Use	Perennial Miles	Intermittent Miles¹	Number of Springs
Meadow Creek FFR	NA			
Moore FFR	year-round (all yrs)	0.2	1.8	0
Munro FFR	year-round (all yrs)	0	0	1
Quicksilver FFR				
Pasture 2	year-round (all yrs)	0	0.2	0
Red Mountain				
Pasture 1	spring & fall (all yrs)	0	16.1	0
Pasture 2	spring (all yrs)	3.6	11.7	0
Pasture 3	spring (all yrs)	3.1	5.5	0
Stahle FFR	NA			
Steiner FFR Pasture 1	year-round (all yrs)	2.6	4.1	0
Toy				
Pasture 1	spring (1 yr), fall (1 yr)	0	4.3	0
Pasture 2	spring (1 yr), fall (1 yr)	0.2	1.8	0
Pasture 3	spring (1 yr), fall (1 yr)	0	1.5	0
Pasture 4	spring (1 yr), fall (1 yr)	0.5	2.5	0
West Castle	fall (all yrs)	0	28.3	0
Whitehorse/Antelope				
Pasture 1	spring (all yrs)	2.1	21.1	2
Pasture 2	summer (all yrs)	2.4	27.4	1
Pasture 3	summer (all yrs)	3.1	37.5	8
Pasture 4	fall (all yrs)	0	12.5	5
Pasture 5	fall (all yrs)	0.4	4.5	2
Pasture 6	summer & fall (all yrs)	9.1	16.7	4
Pasture 7	rest (all yrs)	0.5	3.2	1

¹ Intermittent miles are not differentiated from ephemeral; thus, many of the intermittent miles do not support riparian-wetland areas (based on the NHD)

3.2.3.3 Environmental Consequences of Alternative 2

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.3.1. Any additional specific effects from this alternative will be described below by allotment.

Under the grazing scheme proposed in Alternative 2 (for details see Section 2.2.2), 17 of the Toy Mountain Group 3 allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-8. The impacts would vary according to the season of use (Table RIPN-10).

Table RIPN-10: Grazing rotation, season of use, and stream mileage and number of springs impacted under Alternative 2 for the Group 3 allotments

Allotment/Pasture that contain Riparian Areas	Season of Use	Perennial Miles	Intermittent Miles¹	Number of Springs
Alder Creek	spring & early summer (all yrs)	0.7	0.1	0
Boone Peak	see Pickett Creek allotment			
Box T				
Pasture 1	summer (all yrs)	0.9	4.1	6
Pasture 3	summer (all yrs)	1.5	1.1	0
Pasture 4	summer & fall (all yrs)	0	2.5	8
Bridge Creek	see Pickett Creek allotment			

Allotment/Pasture that contain Riparian Areas	Season of Use	Perennial Miles	Intermittent Miles¹	Number of Springs
Brown's Creek Pasture 1 Pasture 2	spring (1 yr), rest (1 yr) spring (1 yr), rest (1 yr)	0.1 0	13.6 6.2	0 0
Fossil Creek (formerly Pasture 1 of Red Mnt)	year-round (all yrs)	0	16.1	0
Garrett FFR Pasture 2 Pasture 4 Pasture 6	winter (all yrs) winter (all yrs) winter (all yrs)	0.2 0.4 0.7	0.1 0.7 0.5	0 0 0
Hart Creek Pasture 1 Pasture 2 Pasture 3	spring (1yr), rest (1 yr) spring (1yr), rest (1 yr) spring (all yrs)	2.9 0 0	24.5 34.5 22.4	0 0 4
Josephine FFR	NA			
Lone Tree Pasture 1(2) Pasture 4 Pasture 6	spring (all yrs) summer & fall (all yrs) fall (all yrs)	4.2 1.0 1.5	6.8 0 3.6	0 0 0
Louisa Creek Pasture 1 Pasture 2 Pasture 3 Pasture 6	spring (1 yr), fall (1 yr) spring (1 yr), fall (1 yr) summer & fall (all yrs) spring (1 yr), fall (1 yr)	0.8 0 2.7 0.6	4.8 2.6 9.0 2.1	1 0 0 0
Meadow Creek FFR	NA			
Moore FFR	summer & fall (all yrs)	0.2	1.8	0
Pickett Creek (formerly Pastures 2 & 3 of Red Mnt., Bridge Creek, and Boone Peak) Pasture 1 Pasture 2 Pasture 3 Pasture 4	year-round (all yrs) year-round (all yrs) year-round (all yrs) year-round (all yrs)	3.6 3.1 1.3 2.8	11.7 5.5 5.1 13.3	0 0 0 6
Munro FFR	year-round (all yrs)	0	0	1
Quicksilver FFR Pasture 2	see Red Hill allotment			
Red Hill Pasture 2 (formerly Quicksilver 2)	year-round (all yrs)	0.2	0	0
Red Mountain	see Fossil Creek and Pickett Creek allotments			
Stahle FFR	NA			
Steiner FFR Pasture 1	spring (all yrs)	2.6	4.1	0
Toy Pasture 1 Pasture 2 Pasture 3 Pasture 4	spring & early summer (1 yr), fall (1yr) spring & early summer (1 yr), fall (1yr) spring & early summer (1 yr), fall (1yr) spring & early summer	0 0.2 0 0.5	4.3 1.8 1.5 2.5	0 0 0 0

Allotment/Pasture that contain Riparian Areas	Season of Use	Perennial Miles	Intermittent Miles¹	Number of Springs
	(1 yr), fall (1yr)			
West Castle	fall & winter (all yrs)	0	28.3	0
Whitehorse/Antelope				
Pasture 1	spring (all yrs)	2.1	21.1	2
Pasture 2	summer (all yrs)	2.4	27.4	1
Pasture 3	summer (all yrs)	3.1	37.5	8
Pasture 4	fall (all yrs)	0	12.5	5
Pasture 5	fall (all yrs)	0.4	4.5	2
Pasture 6	summer & fall (all yrs)	9.1	16.7	4
Pasture 7	fall (all yrs)	0.5	3.2	1

3.2.3.4 Environmental Consequences of Alternative 3

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.3.1. Any additional specific effects from this alternative will be described below by allotment.

Under Alternative 3, a deferred grazing system is proposed that would generally allow grazing during the spring and/or summer for 2 years, and during the fall the third year of a 3-year rotation. Thus, it was estimated that the impacts would be eliminated approximately 20 percent of the time and about 20 percent of the streams currently not meeting the Standard would make progress toward meeting the standards (i.e., streams would be in PFC). Currently, approximately 103 miles of stream have been assessed, and 22 miles are in PFC. Therefore, the total mileage of streams meeting or making progress toward meeting the Standards would increase from 22 miles to approximately 38 miles.

Under the grazing scheme proposed in Alternative 3 (for details see Section 2.2.3), 17 of the Toy Mountain Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-8. The impacts would vary according to the season of use (Table RIPN-11).

Table RIPN-11: Grazing rotation, season of use, and stream mileage and number of springs impacted under Alternative 3 for the Group 3 allotments

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles ¹	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Alder Creek	summer & fall	0.7	0.1	0	summer & fall	0.7	0.1	0	spring & fall	0.7	0.1	0
Boone Peak	see Pickett Creek allotment											
Box T												
Pasture 1	fall	0.9	4.1	6	summer	0.9	4.1	6	summer	0.9	4.1	6
Pasture 3	summer	1.5	1.1	0	summer	1.5	1.1	0	fall	1.5	1.1	0
Pasture 4	summer	0	2.5	8	fall	0	2.5	8	fall	0	2.5	8
Bridge Creek	see Pickett Creek allotment											
Brown's Creek												
Pasture 1	spring	0.1	13.6	0	rest	0.1	13.6	0	NA			
Pasture 2	rest	0	6.2	0	spring	0	6.2	0				
Fossil Creek (formerly Pasture 1 of Red Mnt)	spring, fall, & winter	0	16.1	0	spring, fall, & winter	0	16.1	0	fall & winter	0	16.1	0
Garrett FFR	spring, summer & fall	0.2	0.1	0	spring, summer & fall	0.2	0.1	0	fall			
Pasture 2	fall	0.4	0.7	0	spring, summer & fall	0.4	0.7	0	spring, summer & fall	0.2	0.1	0
Pasture 4	spring, summer & fall	0.7	0.5	0	fall	0.7	0.5	0	spring, summer & fall	0.4	0.7	0
Pasture 6												
Hart Creek	spring	2.9	24.5	0	rest	2.9	24.5	0	spring	2.9	24.5	0
Pasture 1	rest	0	34.5	0	spring	0	34.5	0	spring	0	34.5	0
Pasture 2	spring	0	22.4	4	spring	0	22.4	4	rest	0	22.4	4
Pasture 3												
Josephine FFR	NA											
Lone Tree												
Pasture 1(2)	spring	4.2	6.8	0	fall	4.2	6.8	0	NA			
Pasture 4	summer	1.0	0	0	early summer	1.0	0	0				
Pasture 6	fall	1.5	3.6	0	spring	1.5	3.6	0				
Louisa Creek	spring	0.8	4.8		spring	0.8	4.8		fall	0.8	4.8	
Pasture 1	fall	0	2.6	1	fall	0	2.6	1	spring	0	2.6	1

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles ¹	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Pasture 2	summer	2.7	9.0	0	summer	2.7	9.0	0	early summer	2.7	9.0	0
Pasture 3	fall	0.6	2.1	0	fall	0.6	2.1	0	spring	0.6	2.1	0
Pasture 6				0				0				0
Meadow Creek FFR	NA											
Moore FFR	summer & fall	0.2	1.8	0	summer & fall	0.2	1.8	0	fall	0.2	1.8	0
Munro	spring, summer, & fall	0	0	1	summer & fall	0	0	1	fall	0	0	1
Pickett Creek (formerly Pastures 2 & 3 of Red Mnt., Bridge Creek, and Boone Peak)												
Pasture 1	spring	3.6	11.7	0	spring	3.6	11.7	0	rest	3.6	11.7	0
Pasture 2	summer	3.1	5.5	0	rest	3.1	5.5	0	spring	3.1	5.5	0
Pasture 3	rest	1.3	5.1	0	summer	1.3	5.1	0	summer	1.3	5.1	0
Pasture 4	summer & fall	2.8	13.3	6	summer & fall	2.8	13.3	6	fall	2.8	13.3	6
Quicksilver FFR	see Red Hill allotment											
Pasture 2												
Red Hill (formerly Quicksilver 2)	spring, summer & fall	0.2	0	0	spring, summer & fall	0.2	0	0	fall	0.2	0	0
Red Mountain	see Fossil Creek and Pickett Creek allotments											
Stahle FFR	NA											
Steiner FFR	spring, summer, & fall	2.6	4.1	0	summer & fall	2.6	4.1	0	spring + fall	2.6	4.1	0
Pasture 1												
Toy												
Pasture 1		0	4.3	0		0	4.3	0		0	4.3	0
Pasture 2	spring	0.2	1.8	0	fall	0.2	1.8	0	fall	0.2	1.8	0
Pasture 3	spring	0	1.5	0	fall	0	1.5	0	fall	0	1.5	0
Pasture 4	fall	0.5	2.5	0	spring	0.5	2.5	0	spring	0.5	2.5	0

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles¹	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
	fall				spring				spring			
West Castle	fall	0	28.3	0	fall	0	28.3	0	fall	0	28.3	0
Whitehorse/Antelope							21.1					
Pasture 1	spring	2.1	21.1	2	spring	2.1	5	2	fall	2.1	21.1	2
Pasture 2	spring	2.4	27.4	1	fall	2.4	12.4	1	spring	2.4	27.4	1
Pasture 3	fall	3.1	37.5	8	spring	3.1	5	8	spring	3.1	37.5	8
Pasture 4	summer	0	12.5	5	rest	0	4.5	5	fall	0	12.5	5
Pasture 5	fall	0.4	4.5	2	fall	0.4	16.2	2	rest	0.4	4.5	2
Pasture 6	rest	9.1	16.7	4	rest	9.1	7	4	summer	9.1	16.7	4
Pasture 7	summer	0.5	3.2	1	fall	0.5	3.2	1	fall	0.5	3.2	1

¹ Intermittent miles are not differentiated from ephemeral; thus, many of the intermittent miles do not support riparian-wetland areas (based on the NHD)

3.2.3.5 Environmental Consequences of Alternative 4

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.3.1. Any additional specific effects from this alternative will be described below by allotment.

Under Alternative 4, a season-based grazing system is proposed that would generally allow grazing during the spring and/or summer for 1 out of every 3 years. Rest and/or fall grazing would be implemented the remaining 2 years. Thus, the impacts would be eliminated about 50 percent of the time and approximately 50 percent of the streams currently not meeting the Standards would make progress toward meeting (i.e., the streams would be in PFC). Currently, approximately 103 miles of stream have been assessed, and 22 miles are in PFC. Therefore, the total mileage of streams meeting or making progress toward meeting the Standards would increase from 22 miles to approximately 62 miles. Under the grazing scheme proposed in Alternative 4 (for details see Section 2.2.4), 17 of the Toy Mountain Group allotments contain riparian-wetland areas and would be subject to the impacts described in Table RIPN-8. The impacts would vary according to the season of use (Table RIPN-12).

Table RIPN-12: Grazing rotation, season of use, and stream mileage and number of springs impacted under Alternative 4 for the Group 3 allotments

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles ¹	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Alder Creek	fall	0.7	0.1	0	fall	0.7	0.1	0	spring	0.7	0.1	0
Boone Peak	see Pickett Creek allotment											
Box T												
Pasture 1	fall	0.9	4.1	6	rest fall	0.9	4.1	6	summer	0.9	4.1	6
Pasture 3	summer	1.5	1.1	0	summer	1.5	1.1	0	rest	1.5	1.1	0
Pasture 4	rest	0	2.5	8	r	0	2.5	8	fall	0	2.5	8
Bridge Creek	see Pickett Creek allotment											
Brown's Creek												
Pasture 1	spring	0.1	13.6	0	rest	0.1	13.6	0	rest	0.1	13.6	0
Pasture 2	rest	0	6.2	0	spring	0	6.2	0	rest	0	6.2	0
Fossil Creek (formerly Pasture 1 of Red Mnt)	spring, fall, & winter	0	16.1	0	fall & winter	0	16.1	0	fall & winter	0	16.1	0
Garrett FFR												
Pasture 2	fall	0.2	0.1	0	spring, summer & fall	0.2	0.1	0	spring, summer & fall	0.2	0.1	0
Pasture 4	fall	0.4	0.7	0	fall	0.4	0.7	0	spring, summer & fall	0.4	0.7	0
Pasture 6	fall	0.7	0.5	0	fall	0.7	0.5	0	fall	0.7	0.5	0
Hart Creek												
Pasture 1	spring	2.9	24.5	0	rest	2.9	24.5	0	rest	2.9	24.5	0
Pasture 2	rest	0	34.5	0	spring	0	34.5	0	rest	0	34.5	0
Pasture 3	rest	0	22.4	4	rest	0	22.4	4	spring	0	22.4	4
Josephine FFR	NA											
Lone Tree	spring	4.2	6.8	0	fall	4.2	6.8	0	fall	4.2	6.8	0
Pasture 1(2)	rest	1.0	0	0	spring	1.0	0	0	rest	1.0	0	0

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles ¹	Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Pasture 4 Pasture 6	fall	1.5	3.6	0	rest	1.5	3.6	0	spring	1.5	3.6	0
Louisa Creek Pasture 1 Pasture 2 Pasture 3 Pasture 6	spring rest fall rest	0.8 0 2.7 0.6	4.8 2.6 9.0 2.1	1 0 0 0	fall spring rest spring	0.8 0 2.7 0.6	4.8 2.6 9.0 2.1	1 0 0 0	rest fall spring fall	0.8 0 2.7 0.6	4.8 2.6 9.0 2.1	1 0 0 0
Meadow Creek FFR	NA											
Moore FFR	summer & fall	0.2	1.8	0	fall	0.2	1.8	0	fall	0.2	1.8	0
Munro	spring, summer, & fall	0	0	1	fall	0	0	1	fall	0	0	1
Pickett Creek (formerly Pastures 2 & 3 of Red Mnt., Bridge Creek, and Boone Peak) Pasture 1 Pasture 2 Pasture 3 Pasture 4	spring rest rest fall	3.6 3.1 1.3 2.8	11.7 5.5 5.1 13.3	0 0 0 6	rest spring rest fall	3.6 3.1 1.3 2.8	11.7 5.5 13.3 3	0 0 0 6	rest rest spring fall	3.6 3.1 1.3 2.8	11.7 5.5 5.1 13.3	0 0 0 6
Quicksilver FFR Pasture 2	see Red Hill allotment											
Red Hill Pasture 2 (formerly Quicksilver 2)	spring	0.2	0	0	summer & fall	0.2	0	0	fall	0.2	0	0
Red Mountain	see Fossil Creek and Pickett Creek allotments											
Stahle FFR	NA											
Steiner FFR Pasture 1	spring, summer, & fall	2.6	4.1	0	summer & fall	2.6	4.1	0	spring + fall	2.6	4.1	0
Toy Pasture 1		0	4.3	0		0	4.3	0		0	4.3	0

Allotment & Pastures that contain riparian areas	Year 1	Perennial Miles	Intermittent Miles ¹		Springs	Year 2	Perennial Miles	Intermittent Miles	Springs	Year 3	Perennial Miles	Intermittent Miles	Springs
Pasture 2	spring	0.2	1.8	0	fall	0.2	1.8	0	fall	0.2	1.8	0	
Pasture 3	fall	0	1.5	0	spring	0	1.5	0	fall	0	1.5	0	
Pasture 4	fall	0.5	2.5	0	spring	0.5	2.5	0	fall	0.5	2.5	0	
	fall				fall				spring				
West Castle	fall	0	28.3	0	fall	0	28.3	0	fall	0	28.3	0	
Whitehorse/Antelope					spring				fall				
Pasture 1	rest	2.1	21.1	2	rest	2.1	21.1	2	spring	2.1	21.1	2	
Pasture 2	fall	2.4	27.4	1	summer &	2.4	27.4	1	rest	2.4	27.4	1	
Pasture 3	spring & summer	3.1	37.5	8	fall	3.1	37.5	8	rest	3.1	37.5	8	
Pasture 4	summer	0	12.5	5	fall	0	12.5	5	rest	0	12.5	5	
Pasture 5	fall	0.4	4.5	2	rest	0.4	4.5	2	summer &	0.4	4.5	2	
Pasture 6	rest	9.1	16.7	4	rest	9.1	16.7	4	fall	9.1	16.7	4	
Pasture 7	fall	0.5	3.2	1	summer	0.5	3.2	1	fall	0.5	3.2	1	

3.2.3.6 Environmental Consequences of Alternative 5

Under Alternative 5, all of the Toy Mountain Group allotments would be rested from grazing for the duration of the 10-year permit. Thus, none of the riparian-wetland areas associated with the streams and springs would be impacted by livestock grazing.

Table RIPN-13: Grazing rotation, season of use, and stream mileage/number of springs impacted under Alternative 5 for the Group 4 allotments

Allotment & Pasture	All Years	Perennial Miles	Intermittent Miles	Springs
All Allotments	no grazing-rested	50	371	48

Under Alternative 5 (for details, see Section 2.2.5), the elimination of grazing for a period of 10 years would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community. Information is lacking on the length of rest required for recovery of riparian vegetation; however, shrubs often require longer periods of recovery than herbaceous vegetation (Powell, Cameron, & Newman, 2000). Improvement in stream channel form and function would only occur if the channel is at a stage where improvement is possible; for example, downcut systems would need to reach a new base level and widening would have to occur to allow vegetation establishment sufficient to resist higher flows (Leonard & Karl, 1995). Recovery would also be dependent on the levels of degradation and the climatic variables (Bellows, 2003). Since the allotments occur in a semi-arid region and the riparian areas are degraded, 10 years of rest would not always generate riparian-wetland areas that historically existed. However, research has found that in ungrazed areas, streams experienced decreased widths and depths (Clary, 1999), vegetation cover increased two-fold, stream bank stability increased by 50 percent (Scrimgeour & Kendall, 2002), and stream bank erosion was 3.3 times less in an ungrazed area compared to an area grazed at a moderate stocking rate and level of use (Kauffman, 1982).

The implementation of this alternative would have the greatest benefit for the riparian and water resources because the riparian ecosystem would recover much of the structural and functional diversity that occurs within the allotments. Thus, the allotments would maintain meeting or make progress toward meeting Standards 2, 3, and 7 that are associated with the water and riparian resources. Additionally, the ORMP objective to maintain or improve riparian-wetland areas to attain PFC for all lotic and lentic systems would be achievable. Similarly, the ORMP objective to meet or exceed State water quality standards would make progress toward being attained.

3.2.4 Special Status Plants

3.2.4.1 Environmental Consequences Common to All Alternatives

The ORMP recognizes the ecological connectivity between resources by tiering from one resource to another. The management action of protecting and enhancing habitat for a diversity of special status species (USDI BLM, 1999b) p. 12) is connected to several resources, particularly vegetation, and the need to ensure proper nutrient cycling, hydrologic cycling, and energy flow. When a pasture or allotment is not meeting the Standard for upland rangeland vegetation (Standards 4 or 5), or occurs in pastures subject to Standard 6 (Exotic Plant Communities other than Seedings), special status plants and their habitats are more vulnerable to degradation from direct and indirect impacts of livestock. Rare (special status plants) and common native plant communities can be retained with the maintenance of healthy native communities, which aids in limiting their susceptibility to direct and indirect effects of livestock, such as herbivory, trampling, alterations to fire interval, non-native weed invasion (Rosentreter, 1992),

and habitat fragmentation.

Grazing strategies that incorporate proper management of special status plants place livestock disturbances outside of special status plant habitats and limit grazing intensity and season of use during special status plant active growing periods and when soils are moist. These management practices reduce or eliminate threats to special status plants by encouraging plant vigor, reproduction, habitat continuity, and overall maintenance.

The consequences of livestock impacts on special status plants are determined by season of use, stocking rate/AUMs, and frequency of use (i.e., recovery interval between disturbances). Monitoring information on special status plants within the project area is limited, so information about specific livestock effects under current management is limited. However, when livestock are present, direct and indirect effects on special status plants have the potential to occur, and it is likely that direct effects may impact individuals and/or vigor and reproduction of the occurrence and their habitats.

Direct effects on special status plants include herbivory and trampling. Special status plants and their habitats are most vulnerable to direct impacts during the spring/critical growing season when plants are flowering and soils tend to be saturated. The majority of species within the project area complete their reproductive cycle by mid-June; thus, the positive effects on upland vegetation and special status plants of decreased trampling and herbivory would be most apparent in those years when livestock grazing is deferred from spring to summer or fall. All special status plants within the project area are not known to be especially palatable to livestock; however, when herbivory does occur, it can lead to partial or entire removal of a plant and subsequent mortality. All other species may be somewhat palatable, especially in concentrated use areas. Doublet, white eatonella, and small phacelia are small and low to the ground, making it difficult for most livestock to graze.

Trampling can be responsible for the partial or entire uprooting of a plant, subsequent mortality, and disturbance to habitat. Eight of the 13 special status plants occur on sparsely vegetated fragile volcanic ash soils, which are unlikely to be heavily used by livestock unless in close proximity to range improvements that would lure livestock to or through a special status plant habitat. Even minimal trampling in special status plant sites with fragile soils can jeopardize the viability of seed within the soil profile, change the soil constitution through churning, and provide opportunity for non-native weed invasion. When trampling occurs in the spring when soils are moist and plants have not completed their reproductive cycle, effects are likely to be most evident on annual species (doublet, white eatonella, white-margined wax plant, stoutstem threadplant, and least snapdragon) because their shallow roots allow for easy dislodging in their loose substrate. Older, established species of milkvetch, King's eyelashgrass, and Antelope Valley beardtongue are likely to be somewhat resilient to trampling under light to moderate use, given the more robust root system of perennial plants. But heavy use, particularly concentrated cattle numbers or extended use within occupied habitat, is likely to damage plants and habitat. Seedlings of all special status plants are highly susceptible to uprooting from trampling and potential mortality. The response of special status plants to direct effects of livestock grazing also varies based on the elevation where species occur.

Indirect effects on special status plants include changes in vegetation composition, non-native weed increase, altered fire regime, habitat fragmentation, and climate change. Decreased competition in a changing vegetation community from a reduction in perennial grasses and an increase in bare ground may benefit some special status plants by decreasing competition. However, the species within the project area are negatively affected by this change, as the increase in bare ground also provides opportunity for non-native weed invasion, particularly at lower elevations where the ecosystem is less resilient to disturbances, in high use areas near rangeland developments, along roads and salt grounds, and at watering sources. This threat of vegetation composition change providing opportunity for non-native

weed invasion is common to all special status plants within the project area to varying degrees. Livestock create bare ground through soil disturbance and can disperse seed as they move from one area to the next. Native and rare plants can be negatively impacted by non-native weed invasion through direct competition for space, moisture, and light (Rosentreter, 1992). Susceptibility to invasion increases when adding drought (West, 1999) to disturbance followed by increased stress to the native and rare plant communities.

Another indirect effect from grazing is ongoing contribution to long-term (more than 10 years) changes in the fire regime, shifting to earlier, larger, and more frequent fires as non-native winter annuals dominate the understory (West, 1999) by providing a continuous flash fuel source. For the persistence of most native plants, this abbreviated fire cycle is unsuitable (Wright, 1985) (Rosentreter, 1992) and promotes a change toward decreased species composition, abundance of non-native weeds, and, at lower elevations, potential for monocultures of annual weeds. It is likely that non-native weed invasion and altered fire regime would adversely affect these occurrences in the long-term (more than 10 years) through the loss of and fragmentation of habitat. Fragmentation stems from vegetation composition change and can interrupt the transfer of pollinators and, consequently, genetic flow between special status plant occurrences (Tepedino, Sipes, Barnes, & Hickerson, 1997). Management influences on entire ecological groups of plants can compromise the community through loss of a functional group and, hence, a pollinator group (Corbet, 1997), such as in those pastures where non-native annual species are strongest (or even a monoculture). Habitat fragmentation can be a concern for special status plants where non-native weed invasion is an issue and upland rangeland health Standards 4 and 5 are not being met. Corbet (1997) and Tepedino et al. (1997) amplify the importance of maintaining communities with high floristic diversity to provide necessary forage for pollinators throughout a growing season. In pastures where habitat fragmentation has occurred (functional/structural groups have been lost, or non-native weeds are dominant) rare plants are highly susceptible to downward trends.

Global climate change may have a significant negative impact on special status plants due to the small number of sites and the relative lack of resiliency many of these plants show in response to changing habitat conditions. Four of the 11 species within the project area are endemic plant species with limited distributions, and they require specialized habitats (mudflat milkvetch, Earth lichen, white-margined wax plant, and Packard's buckwheat); according to (Hawkins, Sharrock, & Havens, 2008) and (Foden, et al., 2008), they will be at greatest risk. The altered future climate may not provide the conditions that are favorable for these species where they currently occur. Other plant species may be better adapted to the altered climate at special status plant sites. These invader species could out-compete the special status plants. The cumulative impacts of climate change on endemic special status plants could lead to increasing rarity for these species.

Refer to Section 2.2 for a summary of alternative development and which allotments are included in each alternative. Six of the 20 allotments have known occurrences of special status plants.

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2. Any additional specific effects from this alternative will be described below by allotment.

Analyses of the alternatives are based on the consequences of seasons and intensities of livestock grazing use (Appendix B) that have led to the current conditions for the riparian areas and water quality as discussed above in the Affected Environment Section 3.1.4. Consequently, Alternatives 2 through 5 were compared with Alternative 1 (current condition) to assess the different level of effects on riparian area conditions and water quality. The following section provides introductory concepts and general impacts for expected effects resulting from livestock management practices that are common to all grazing alternatives. Specific environmental consequences, as they apply to the 20 Toy Mountain Group

allotments, from direct and indirect effects of the individual alternatives, are discussed in Sections 3.3.1 through 3.3.20.

3.2.4.2 Environmental Consequences of Alternative 1

Alternative 1 would continue to authorize grazing under the same terms and conditions and the same AUMs as in the current permit (see Section 2.2.1). Flexibility in the established grazing schedule as recently implemented between 1997 and 2012 has led to the existing condition and would continue (Appendix B) if permitted. Grazing season of use would primarily include wet spring and early summer season and critical growing season use and would continue to reflect existing conditions. Of the 20 allotments to which Alternative 1 applies, all 20 of the allotments are currently meeting Standard 8 for special status plant species (SSPS); however, not all are anticipated to make progress toward meeting all other Rangeland Health Standards and ORMP objectives over the life of the permit due to the Standards not meeting. The allotments that are meeting may continue to do so, while those that contain pastures identified to be at risk have the potential to show increased declines in habitat quality and viability that could move them from meeting to not meeting in the future.

3.2.4.3 Environmental Consequences of Alternative 2

The grazing schemes proposed by the permittees (Section 2.4; Appendix D) would be the same as the current management (Alternative 1). Thus, the impacts associated with the remaining allotments under Alternative 2 would be the same as those described above under Alternative 1 (Section 3.2.13). Grazing season of use would primarily include wet spring and early summer season and critical growing season use and would continue to reflect existing conditions.

3.2.4.4 Environmental Consequences of Alternative 3

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.4.1. Under Alternative 3, a deferred grazing system is proposed that would generally allow grazing during the spring and/or summer for 2 years and during the fall the third year of a 3-year rotation. Six of the Toy Mountain Group allotments contain SSPS occurrences and would be subject to the impacts described in 3.2.1.3. The impacts would vary according to the season of use.

3.2.4.5 Environmental Consequences of Alternative 4

The difference between Alternative 4 and Alternative 1 is the incorporation of grazing schedules in the Toy Mountain Group allotments that would rest and/or defer grazing outside of critical growing season use more often than any other grazing alternative considered, generally for a minimum of 2 years within a 3-year rotation. Under the grazing scheme proposed in Alternative 4 (Section 2.2.4), the impacts would vary according to the season of use. Putting into practice of increased rest and/or periodic deferment outside of critical-growing-season use is expected to increase and maintain vegetative vigor of native plant communities. This would positively affect SSPS occurrences because improved diversity and vigor of upland vegetation communities provides soil stability, appropriate hydrologic function, litter amounts, and nutrient cycling. The restricted seasons, compared to Alternative 1, would result in a decrease in active AUMs over the life of the permit (Appendix C). Upland vegetation communities would have an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to invasive weed encroachment. Adjustments in seasonal use would also reduce grazing in riparian areas during the height of the summer and move grazing into the later summer and fall season, generally 2 out of 3 years. This would benefit SSPS occurrences by reducing livestock impacts to plants after the critical growing season and promote completed plant growth cycles.

3.2.4.6 Environmental Consequences of Alternative 5

The elimination of livestock grazing and the impacts associated with this activity would permit the unhindered expansion of the existing vegetation cover. Rangeland Health Standards and ORMP SSPS

objectives would be met, allow for an upward trend over the life of the permit, and positively affect habitat stability, productivity, and functional/structural groups over the short and long term.

Suspending livestock grazing for 10 years would eliminate physical trampling and soil impacts from hoof action, improve the vegetative cover and microbiotic soil development, and promote native plant recovery and upland watershed health for 20 allotments. The possibility of a continuous wildfire event from the fuel build-up associated with the increased litter and plant growth expected over the life of this alternative is a risk, of which could adversely impact SSPS occurrences. Livestock trailing would occur every year as needed and is not dependent on whether an allotment is rested during the time of trailing. The naturally occurring limitations associated with weather events such as drought, extreme temperatures, and precipitation amounts and timing would also be a consideration in recovery using Alternative 5, although less of an issue compared to Alternative 1.

3.2.5 Wildlife and Special Status Animals

3.2.5.1 Environmental Consequences Common to All Alternatives

Issues relating to Wildlife and Special Status Species

1. Is current grazing management affecting the quality and abundance of upland habitat for dependent wildlife and special status species?
2. Is current grazing management affecting the quality and abundance of riparian habitat for dependent wildlife and special status species including redband trout and spotted frogs?
3. Is current grazing management affecting the quality and abundance of sage-grouse habitat (breeding, summer, and winter)?

Analysis Methodology

Each alternative will be compared to the current environmental conditions and grazing practices and the effects from each alternative will be described. Effects analysis will focus on upland, riparian, and sage-grouse habitats. Upland and riparian habitat analysis will disclose the impacts to wildlife habitat and how they affect wildlife's ability to survive and reproduce successfully in these habitats. Sage-grouse habitat analysis will cover the impact to and their effect on the survival and reproductive success of sage-grouse. Sage-grouse will be used as a focal species for shrub steppe dependent wildlife and special status species.

To make efficient use of the data available for this group of allotments and have a clean analysis without large amounts of repetition, it is necessary to make several assumptions about how the data can correlate to multiple habitat types and many special status species. As with all assumptions, there are times when they won't fit perfectly, but in general, they are expected to cover the species and habitats within this group of allotments. If additional site-specific information is available for individual special status species, it will be used to analyze impacts to that species at that location.

The following assumptions were used to facilitate the analysis of special status species and general wildlife habitats:

Assumption 1: Upland habitats that are meeting Standard 4 (Native Plant Communities) are either providing adequate habitat or have the ecological processes in place that will allow for the development of adequate habitat for upland special status species and general wildlife.

Rationale: Upland habitats vary greatly depending on the soil type, climate, and landform and very different habitats may be found close to each other. Data collected for analysis of Standard 4 are often all of the quantitative site-specific data that is available to assess upland wildlife habitat. Analysis of Standard 4 uses the data from trend sites, utilization measurements, and assessments based on the 17 indicators of rangeland health. This data is compared to the appropriate ecological site description from NRCS to determine if the appropriate plant community is present. In habitat management, the BLM cannot expect more from a certain habitat type than what it is capable of, based on its soil type, climate, and landform. Every location cannot provide habitat for every species and it is not feasible to attempt to assess every single niche on the landscape. If a site has the appropriate soil, hydrological, and biological components and each process (nutrient cycling, hydrologic cycling, and energy flow) is functioning properly, then the site is providing what habitat it is capable of, or it can progress toward its site potential and therefore habitat potential. Properly functioning ecosystems can provide the diversity of habitats that are necessary for most species that are dependent on that ecosystem.

Assumption 2: Riparian habitats that are meeting Standards 2, 3, and 7 are either providing adequate habitat or are developing suitable habitat for riparian-dependent special status species and general wildlife (including redband trout and spotted frog, if present).

Rationale: BLM assesses riparian habitat using the Proper Functioning Condition method. Additional species-specific habitat parameters are not measured in most areas. Riparian habitats vary greatly depending on their width, gradient, and amount of water. The habitat they are capable of providing also varies greatly, but when they are in Proper Functioning Condition, they are providing either the habitat they are capable of or the processes to develop to their capability are working properly. Riparian habitats are ephemeral in nature and portions are removed by flood events every few years. However, as long as the vegetation has the opportunity to establish, grow, and reproduce on a regular basis, they can maintain these complex riparian habitats. Some riparian habitats will provide cool well-shaded redband trout habitat, while others will provide open shallow pool habitat for spotted frogs, and others will only have surface water for portions of the year and cannot provide habitat for either species but may provide migratory bird nesting and foraging habitat. Properly functioning riparian habitats can provide the diversity of habitats that are necessary for most species that are dependent on that ecosystem.

Assumption 3: When pastures or allotments are providing productive sage-grouse habitat, they are also providing adequate habitat for the other special status species and general wildlife.

Rationale: Sage-grouse are an indicator species and require large areas of mostly undisturbed sagebrush steppe habitat that has a diverse assemblage of native shrubs, grasses, and forbs. Site-specific quantitative analyses were performed in many of pastures within this group of allotments. These data indicate whether specific habitat components are providing suitable habitat for sage-grouse. These habitat component requirements focus on the sage-grouse's need to forage on sagebrush, forbs, and insects and have suitable nesting, hiding, and escape cover. If these components are provided for sage-grouse, then the habitat would also be suitable for a variety of other shrub steppe dependent wildlife species.

Basis for the expected outcomes from changes in grazing management

Habitat for wildlife species and special status species must provide for food, cover, survival, and reproduction of each species. Not every plant community will provide all of the components necessary for every species. However, if the plant communities are able to maintain their vigor and diversity, and the ecological processes are functioning properly, then those plant communities would provide what habitat they are capable of or could progress toward their capability.

General impacts from livestock grazing on upland habitats

Active-growing-season use

Grazing upland habitats during the active growing season can have multiple impacts to wildlife habitats. Deep-rooted perennial grasses and forbs exhibit reduced growth and reproduction the year of and the year following clipping during the active growing season (Blaisdell & Pechanec, 1949), (Mueggler, 1975). These grasses are most sensitive to grazing during the boot stage when seedheads are beginning to form (Blaisdell & Pechanec, 1949). Heavier use in the growing season resulted in lower vigor the following year (Mueggler, 1975). Plants with low vigor might require multiple years of recovery before producing a similar amount of seedheads as plants with high vigor (Mueggler, 1975). A review of the literature by Anderson (1991), pertaining to the effects of defoliation and vigor recovery of bluebunch wheatgrass, and research by Ganskopp (1988), pertaining to similar effects to Thurber's needlegrass, revealed a high sensitivity to clipping during the active growing season. Clipping that occurred when the plant was entering the boot stage, which is a period early in its seed producing stage of growth, was the period of highest sensitivity. Deep-rooted perennial grasses like blue bunch wheatgrass and Idaho fescue are the grasses that typically provide sufficient herbaceous cover for sage-grouse while shallow-rooted grasses like Sandberg's bluegrass typically do not attain a sufficient height to provide adequate cover. Connelly et al. (2000) acknowledges that sites dominated by short statured grass may not be capable of providing the seven inches of that is recommended during the spring nesting season. In sites that are dominated by short statured bluegrass Cagney et al. (2010) recommended managing for high vigor to provide at least some herbaceous cover. If deep-rooted perennial grasses are still present on a site even in lower abundances, managing for high vigor would provide the opportunity for them to reproduce and increase in abundance and increase cover for sage-grouse.

Grazing upland shrub steppe habitats can reduce hiding and nesting cover and forage available for wildlife species by reducing the vigor and abundance of perennial grasses and forbs. Reduced forage requires a species to travel further to find sufficient food. Reduced cover makes nests, burrows, or other cover locations more visible to predators. Decreased forage and cover can increase predation on nests and broods and individual animals. Sagebrush, the dominant shrub in shrub steppe habitats, is relatively ungrazed by livestock grazing, but it can be trampled. Generally, the cover and forage provided by sagebrush to wildlife remain more constant than that of grasses and forbs. The active growing season is also the time when many wildlife species are reproducing, so having habitats with sufficient forage and cover is critical during this time.

Deferment

Deferment involves the delay of grazing in a pasture until the seed maturity of the key forage species (Holechek, Pieper, & Herbel, 1998). As described in chapter 2 of this document deferment would be from May 1 to June 30 at elevations below 5,000 feet and from May 1 to July 15 at elevations above 5,000 feet. Deferment during the active growing season allows upland vegetation to complete its annual growth and reproduction cycle without disturbance from livestock. Perennial grasses and forbs are able to replenish and develop their root system and energy storage. Seedlings are able to become established and develop an adequate root system to survive the winter. Deferment allows perennial grasses and forbs to regain vigor that is lost from grazing during the active growing season in previous years. Plants with high vigor can break dormancy earlier, get taller, and produce more seed than plants with low vigor.

Deferment would provide increased cover and forage for wildlife and those that breed or have young in the spring and early summer would have reduced disturbance and or competition from livestock.

Fall winter use

Grazing after the active growing season has little effect on the vigor and reproductive capability of bluebunch wheatgrass (Blaisdell & Pechanec, 1949). By early fall, upland plants have typically completed most or all of their growth for the year and are beginning to become dormant, and light to moderate grazing has little effect on the vigor of the plant. However Sauer (1978) found that the removal of all standing herbage from dormant bluebunch wheatgrass in the winter reduced herbage production the following year.

Rest

Rest involves not grazing a pasture or allotment for an entire year and provides more time for plants to recover from past grazing influences compared to deferment (Holechek, Pieper, & Herbel, 1998). Like deferment, rest allows upland vegetation to complete its annual growth and reproduction cycle without disturbance from livestock, but rest also ensures that the residual cover remains through the fall and winter.

Rest would allow wildlife to breed, reproduce, and raise young without competition or disturbance from livestock. Habitats would have more cover and forage which would increase reproductive success.

General impacts from livestock grazing on riparian habitats

Riparian hot-season use

Livestock spend more time in riparian habitats in the late summer when temperatures are the highest (Parsons, Momont, Delcurto, McInnis, & Porath, 2003). Because upland grasses are often dry and temperatures are warmer during the summer months, livestock make disproportionate use of riparian areas and riparian herbaceous vegetation is preferred (Powell, Cameron, & Newman, 2000), (Bailey & Brown, 2011). Impacts to riparian vegetation during the hot season are going to be disproportionate to the uplands also. In semi-arid rangelands where forage growth is limited primarily by precipitation, ensuring that riparian area grazing does not occur during the critical late summer period may be more beneficial than rotational systems that defer livestock use throughout the grazing season (Bailey & Brown, 2011). A fall system of grazing would be beneficial for the improvement of the riparian areas when stream bank temperatures are cool enough to discourage animals from congregating in the riparian areas (Bellows, 2003).

Livestock grazing in riparian habitat can reduce vegetation and modify stream banks causing erosion (Kauffman, Krueger, & Vavra, 1984). Vegetation loss, both from grazing and from erosion, decreases shading, which results in higher water temperatures. Vegetation loss also reduces forage and cover for wildlife in riparian habitats. Trees, shrubs, and herbaceous vegetation form multi-layered complex habitats in riparian areas that provide a wide range of niches for aquatic and terrestrial wildlife species. The loss of any component of a riparian area can reduce cover and forage for some wildlife species. Riparian habitats are ephemeral in nature and portions are removed by flood events. However, as long as the vegetation has the opportunity to establish, grow, and reproduce on a regular basis, they can maintain these complex riparian habitats. Grazing riparian habitats every year for extended periods during the hot season typically results in overutilization of herbaceous and woody vegetation, which reduces the vigor and reproductive capability of existing plants and inhibits the establishment of seedlings.

Redband trout impacts

Redband trout are the resident form of steelhead trout that historically returned from the ocean to spawn in streams throughout the Toy Mountain Group allotments' watersheds (now restricted by downstream dams). In the Owyhee Uplands, redband trout prefer cool streams with temperatures below 70° F (21° C). However, they can survive daily cyclic temperatures up to 80° F (27° C) for a short period of time (IDFG,

2006b). Redband trout spawn in these streams in the spring/summer in pool tail-outs where there is abundant gravel.

Livestock grazing in riparian habitats can reduce shading from herbaceous and woody riparian plant species. Heavy grazing can result in insufficient vegetation to protect the stream channel during a flood event and result in bank erosion and increased sediment in the stream channel. Heavy utilization of woody riparian species may be reducing shade in streams with redband trout. Zoellick and Cade (2006) found a strong positive correlation between stream shading and redband trout densities in southwest Idaho. Heavy woody browse utilization by livestock could result in loss of shade, which could reduce a creek's ability to support viable populations of redband trout. Livestock can trample stream banks, which increases the width of a stream, decreases water depth, and increases sediment in the stream. Wider and shallower streams with less shading would have warmer water temperatures and could reduce the amount of redband trout habitat in a stream. Fine sediment can settle on redband redds and suffocate eggs or trap newly hatched fry. Livestock can also trample redds, which could reduce recruitment.

Spotted frog impacts

Columbia spotted frogs are typically found in clear, slow-moving or ponded waters with little shade and relatively constant temperatures, such as springs, beaver ponds, oxbows, lakes, stock ponds, and backwaters (USDI USFWS, 2012). They require shallow habitats for breeding/egg-laying and deep areas with silt or mud bottom where they can overwinter if the pool ices over. Livestock can alter stream banks and channels by trampling and removing stabilizing vegetation, which can cause lateral and vertical instability and reduce sinuosity in streams. Pools and backwaters can be reduced or lost as stream channels shift or become incised.

General impacts from livestock grazing on sage-grouse habitats

Livestock can interact with sage-grouse and alter their habitat in several ways. Livestock can flush sage-grouse hens from their nests, which may increase the risk of nest predation or abandonment (Coates, Connelly, & Delehanty, 2008) and (Coates & Delehanty, 2010). One cow has been observed eating a sage-grouse egg from the nest (Coates, Connelly, & Delehanty, 2008) but that is probably an uncommon occurrence. Cattle directly compete with sage-grouse for forage seasonally (USDI USFWS, 2010) (i.e. When hens are preparing to nest and when hens are raising broods in the summer). Livestock grazing can reduce the height and abundance of grasses and forbs in both upland and riparian habitats which reduces both forage and cover for sage-grouse. As described by Connelly et al. (2000), sage-grouse rely on sagebrush habitats in which deep-rooted perennial grasses and forbs are a significant component. Because deep-rooted perennial grasses provide hiding cover and forbs provide a large portion of sage-grouse food during the breeding, nesting and brood-rearing seasons. When these components are reduced within the community, sage-grouse survival and reproduction can be decreased. Livestock grazing can also stimulate the growth of forbs that sage grouse rely on in upland meadows and sage-grouse use light to moderately grazed meadows during the summer (Beck & Mitchell, 2000). Sage-grouse also use agricultural fields during the summer (USDI USFWS, 2010) and (Connelly, Schroeder, Sands, & Braun, 2000).

Grazing during the sage-grouse nesting season

Idaho Range readiness requires 3-4 inches of active growth if residual growth is present on deep-rooted perennial grasses (bluebunch wheatgrass and Idaho fescue) before allowing grazing in the spring. If residual growth is not present then additional growth is required before turning out cattle (Appendix I). This ensures that some herbaceous cover is present in the spring before livestock are turned out onto public lands and reduces the amount of residual herbaceous growth that is removed by livestock in the spring. Residual grass growth from the previous year is less nutritious and less used by livestock than new green growth. Holloran et al. (2005) indicate that residual cover and height of perennial grasses is important for successful sage-grouse nests.

Cattle can reduce the cover around sage-grouse nests by grazing during the nesting season. This may decrease nest success by increasing the visibility of nests to predators however no research has indicated that this is occurring. In fact, in a study area where cattle are grazed yearly, Coates and Delehanty (2010) found that nest success increased as the number of days of incubation increased in Nevada. Also in Montana on a study site where cattle are grazed, Moynahan et al. (2007) observed that nest success was higher for nests that began later in the year. Coates and Delehanty (2010) suggested that the increased nest success was due to poorly concealed nests being depredated early in incubation cycle. If livestock were removing enough cover at these sites to expose nest to predators then an opposite trend would be expected because cattle would be exposing the nests to predators by eating the existing cover.

Although cattle have been identified flushing sage-grouse from nests and even one cow eating a sage-grouse egg; researchers have not indicated that flushing or nest predation by cattle is a threat to sage-grouse populations (Coates, Connelly, & Delehanty, 2008), (Coates & Delehanty, 2010), and (Moynahan, Lindberg, Rotella, & Thomas, 2007). In fact Moynahan et al. (2007) flushed sage-grouse from nests as part of their research and reported that less than one percent of sage-grouse abandoned their nests due to flushing by researchers. Coates et al. (2008) flushed hens from nests but never reported that the nests were abandoned due to flushing. Nest predation or abandonment as a result of livestock grazing can happen but appears to be a negligible cause of nest failure.

Multiple sources have indicated that livestock grazing can reduce herbaceous vegetation and degrade sage-grouse habitat (Connelly, Schroeder, Sands, & Braun, 2000), (Crawford, et al., 2004), (Beck & Mitchell, 2000), and (USDI USFWS, 2010). However multiple sources have indicated that light to moderate livestock grazing can maintain and improve herbaceous vegetation vigor and abundance compared to heavy grazing (Van Poolen & Lacey, 1979), (Holechek, Pieper, & Herbel, 1998), and (Holechek, Gomez, Molinar, & Galt, 1999).

In Alternative 3 utilization limits and deferment 1 in 3 years would maintain or improve of vigor and reproductive capability for the herbaceous understory. This would help ensure adequate herbaceous cover to conceal sage-grouse nests and young. In Alternative 4 an additional year of deferment or rest is used in place of utilization limits and is intended to increase the vigor and reproductive capability of herbaceous vegetation by allowing them to grow and reproduce without disturbance from livestock 2 of 3 years. It is assumed in most cases that grazing in a manner that will maintain and increase the vigor of deep-rooted perennial grasses would also provide adequate cover for sage-grouse.

Connelly et al. (2000) recommends that sage-grouse habitat be managed to ensure a healthy herbaceous understory that is at least seven inches in height during the spring nesting season. A term and condition of a minimum seven inch stubble height would ensure that the height requirement is met but may not ensure that the herbaceous layer is healthy and robust. Grazing deep-rooted perennial grasses to a seven inch height every year during the growing season would remove all the seedheads and would effectively limit reproduction in any year. Deferment or rest, on the other hand would ensure both the adequate height in that year and the healthy herbaceous understory in subsequent years. Holloran et al. (2005) suggest that at least 4 inches of residual grass height is important for successful sage-grouse nests.

Livestock graze in an uneven manner and each pasture will have areas of higher and lower utilization usually affected by distance from water and slope. Even in years with heavy utilization in some areas other areas are lightly or un-grazed. Sage grouse select areas that have higher grass and sagebrush cover than random sites (Connelly, Schroeder, Sands, & Braun, 2000). Some areas may not be capable of producing grass that is seven inches tall. Therefore sage-grouse would seek out areas with suitable cover which may take a little more work in years when grazing occurs during the nesting season. Basically

sage-grouse will find suitable nest sites within many different sagebrush habitats if these habitats are able to maintain vigor and reproductive capability.

Seven inches is not a threshold where suddenly sage grouse nesting success disappears. Multiple studies have found successful sage-grouse nests in areas that averaged less than seven inches of herbaceous cover (Connelly, Schroeder, Sands, & Braun, 2000). Even a stubble height term and condition cannot guarantee that every herbaceous plant will have a seven inch stubble height. Additionally areas with taller sagebrush may require grass heights much taller than 7 inches in order to provide adequate cover (Connelly, Schroeder, Sands, & Braun, 2000). Therefore the focus is to develop a healthy and vigorous herbaceous understory that is capable of reproducing and maintaining itself on the landscape. The goal is to improve vigor, allow for reproduction and establishment, and ensure properly functioning ecosystems and then let sage grouse select suitable nesting habitats within those ecosystems.

The issue on many allotments is that many areas are lacking the deep-rooted perennial grasses and/or the ones that are present have low vigor. Grazing management that provides for increased vigor and reproductive capability would also increase cover and forage for sage-grouse and would increase suitable nesting sites and increase nest and brood success.

Holloran et al. (2005) suggest that degrading nesting habitat reduces nesting success. It follows that improving nesting habitat would increase nesting success. Management that increases residual grass cover and height in sagebrush stands would increase sage-grouse nesting success (Holloran, et al., 2005). (Barnett & Crawford, 1994) found that sage-grouse hens selected a high proportion of forbs in their early spring diet and in years when forbs were available sage-grouse production was higher. This suggest the increasing the amounts of forbs available would increase sage-grouse hen nutritional status and nesting success.

West Nile Virus has been documented as a source of mortality for sage-grouse in Idaho and in 2006, sage-grouse hunting was closed in western Owyhee count due to concerns of West Virus impacts (Idaho Sage-grouse Advisory Committee, 2008). Sage-grouse are quite susceptible to West Nile Virus and very few are resistant to the disease. West Nile Virus is primarily spread by mosquitoes which breed in a variety of locations including springs, creeks, reservoirs, stock ponds and troughs. Many water sources are present within the Toy Mountain Group of allotments that could support mosquitoes infected with West Nile Virus. This EA does not analyze any alternatives that would add additional water sources to the landscape and the existing abundance of water sources is expected to remain the same on public lands within this group. West Nile Virus is expected to remain in the area and sage-grouse would continue to be at risk of exposure but no alternatives within this EA are expected to add to or subtract from that risk of exposure.

Other Factors affecting wildlife habitat in uplands

Cheatgrass effects to shrub steppe habitat

Non-native invasive species alter environmental conditions and/or resource availability, causing functional as well as compositional changes (D'Antonio & Vitousek, 1992). Invasive species often out-compete native vegetation for water and nutrients, which results in less-vigorous native species and fewer seedlings that survive. Over time, invasive species may eliminate some native plant species from the community. Invasive species like cheatgrass are more fire-tolerant than native species in the shrub steppe ecosystems and quickly establish after a fire. Invasion can set in motion a grass/fire cycle where an invasive grass colonizes an area and provides the fine fuel necessary for the initiation and propagation of increasingly frequent and intense fire occurrences.

As fire frequencies increase, cheatgrass can become the dominant species in the community and alter the habitat sufficiently that it is no longer used by many species of wildlife. Cheatgrass out-competes native grass and forb species that wildlife rely on for cover and forage but provides less cover and lower-quality forage. Once cheatgrass becomes a dominant part of a plant community, is very difficult to remove, and cost-effective techniques for large areas haven't been developed. Areas in which cheatgrass is a dominant component would be expected to remain in that state regardless of what type of grazing practices are implemented under Alternatives 1-5.

Juniper encroachment effects on shrub steppe habitats

Western juniper invasion in former grass- and shrub-dominated ecosystems can alter hydrologic cycles, soil stability, and vegetative community composition and diversity. Juniper is highly competitive in terms of available soil moisture, nutrients, and understory photosynthetic needs (Pierson, Bates, Svejcar, & Hardegree, 2007) (Wilcox & Davenport, 1995). As juniper increases, shrubs, bunchgrasses and forbs decrease in the plant community, especially those with shallow soils (Miller, Svejcar, & Rose, 2000). Juniper encroachment can result in a decrease in sagebrush, perennial grasses, and perennial forbs (Crawford, et al., 2004).

Juniper encroachment can decrease the shrub, grass, and forb cover and forage that shrub steppe-dependent wildlife species rely on for survival and reproduction. On the other hand, juniper also increases perching sites for raptors and ravens that prey on shrub steppe dependent wildlife species. Juniper is an important source of food and cover for many wildlife species (including mule deer, elk, and many migratory birds). Sage-grouse avoid areas with juniper encroachment (Casazza, Coates, & Overton, 2011), (Knick, Hanser, & Preston, 2013). Juniper encroachment is at various stages throughout the Toy Mountain Group. In some areas, shrub steppe has already been converted to conifer woodlands, but in others, juniper is just beginning to spread into shrub steppe habitats. Where juniper is just beginning to encroach, shrub steppe habitats might have many years before junipers are dense enough to limit the use of an area by shrub steppe-dependent wildlife species. Juniper encroachment may only be occurring on a small portion of an allotment, and the remainder of the allotment has little or no juniper. Therefore, some allotments that have juniper encroachment identified as an issue may still be able to provide productive habitat and meet wildlife habitat parameters for many more years.

Climate Change

Climate change can affect the suitability and potential of habitats upon which wildlife rely. Wildlife species and their habitats must either adapt to environmental changes or move to locations with suitable environmental conditions for survival and reproduction. To effectively adapt habitats need to be in good condition and provide opportunities for reproduction and survival. Large intact landscapes are necessary to allow for habitat movement in response to climate change up and down in elevation and north and south. Intact and connected habitats would allow sagebrush to colonize higher elevations and more northern locations as temperatures increase and as lower elevations and more southern locations become unsuitable for the maintenance of sagebrush. As habitats become fragmented or have low vigor and aren't able to reproduce they become less able to adapt to changing climate conditions and portions of habitats may be lost.

Trailing Analysis

Trailing

The authorization of Trailing within the Owyhee Field Office, including the Toy Mountain Group, was analyzed within the 2012 Trailing EA (USDI BLM, 2012b). However, approximately 6 additional miles of cattle trailing routes through portions of the Browns Creek, Hart Creek, West Castle, and Whitehorse/Antelope allotments has been requested. These additional routes were not analyzed in the

2012 Trailing EA, but they do not differ in habitat types or in the context and intensity of impacts from those analyzed in the 2012 Trailing EA. Therefore, the full analysis of impacts to wildlife and special status species from that EA is hereby incorporated by reference.

3.2.6 Recreation and Visual Resources

3.2.6.1 Environmental Consequences of Alternatives 1 through 4

Hunting is the most likely recreational activity to be affected under any of the grazing alternatives in those allotments/pastures where grazing schedules overlap with hunting seasons. OHV use could also be impacted slightly in areas within the Owyhee Front, especially in areas where livestock tend to congregate around the trail, temporarily slowing or impeding OHV travel. These impacts, however, are considered to be negligible.

Under all grazing alternatives, the Owyhee Field Office would continue to work with permittees on the coordination of event dates for motorized events (i.e., motorcycle races) in order to prevent any overlap/interference with livestock operations and vice versa. Non-motorized events such as equestrian endurance rides that occur within the area are not typically impacted by grazing operations. Livestock trailing activities would not impact recreational resources or public safety due to the fact that trailing events would be of low frequency and would generally be of short duration. Buffers extending beyond the existing roadways also provide an opportunity for livestock to get off of roadways, which allow traffic to pass through. Additionally, most trailing activities occur on existing routes made up of gravel or native materials, which also help reduce traffic speeds. Effect of trailing on visual resources would also be negligible due to the fact that livestock trailing occurs on existing roads.

There are no proposed spring developments or water haul sites under any of the grazing alternatives. Additional water sources tend to distribute livestock more evenly throughout the area, decreasing the likelihood of livestock on roads and trails, thus minimizing recreationists' interactions with livestock. Additionally, there are no proposed fence projects for any of the alternatives, which would maintain the existing opportunities for hikers and equestrian users to travel cross-country. This also prevents the creation of new disturbance as fences are constructed in relationship to visual resources, and the potential for new trails along fence lines.

Due to the fact that impacts to recreation are negligible from any of the grazing alternatives, and all grazing alternatives are in conformance with the VRM classifications throughout the allotments, recreation and visual resources will not be discussed further in this document.

3.2.6.2 Environmental Consequences of Alternative 5

This alternative would provide the greatest benefit to recreationists. There would be no interaction between livestock and recreationists, and as the overall conditions of the area improve, so would visual quality, thus creating a more enjoyable recreation experience. There would be no effects to upland vegetation and riparian areas from livestock, thus improving the overall health and visual quality throughout the allotments. Improved wildlife habitat conditions would increase wildlife viewing opportunities and potentially result in increased hunting success.

3.2.7 Areas of Critical Environmental Concern (ACECs)

3.2.7.1 Environmental Consequences Common to All Alternatives

The ORMP recognizes the ecological connectivity between resources by tiering from one resource to another. The management action of protecting and enhancing habitat for a diversity of special status

species (USDI BLM, 1999b) p. 12) is connected to several resources, particularly vegetation, and the need to ensure proper nutrient cycling, hydrologic cycling, and energy flow.

A number of alternatives call for reductions in AUMs on some or all of the allotments, grazing strategies that incorporate proper management of ACECs, limit livestock disturbances outside of these habitats, and limit grazing intensity and season of use during plant active growing periods and when soils are moist. These management practices reduce or eliminate threats to native plants by encouraging plant vigor, reproduction, habitat continuity, and overall maintenance. Due to the vast and rugged nature of the land, unknown occurrences of special status plants are likely to be present in all allotments in this group. One BLM SSPS plant, Idaho milkvetch (*Astragalus conjunctus*), has been observed in 2013 monitoring; see Table ACEC-1 below.

Table ACEC-1: Special Status Plant Species, Status, and general habitat type for Cinnabar Mountain RNA/ACEC

Species	ID BLM Status	State Rank	Habitat	Allotment
Idaho milkvetch (<i>Astragalus conjunctus</i>)	Type 4	ID 2/OR SNR	Soil derived from volcanic (primarily basalt) parent material on rocky hilltops, hillsides and canyon benches within sagebrush scabland or steppe communities up to the lower boundary of pine forest. Perennial forb.	Boone Peak ¹⁵⁷

The consequences of livestock impacts on native plants are determined by season of use, stocking rate/AUMs, and frequency of use (i.e., recovery interval between disturbances). Monitoring information on special status plants within the project area was conducted in 2006 and again in 2013. Specific livestock effects under current management are disclosed in this EA in Section 3.1.7 and in the monitoring report (Corbin, 2013). However, when livestock are present, direct and indirect effects on special status plants have the potential to occur, and it is likely that direct effects may impact individuals' and/or vigor and reproduction of the occurrence and their habitats.

Direct effects on ACEC plants include herbivory and trampling. Plants and their habitats are most vulnerable to direct impacts during the spring/critical growing season when plants are flowering and soils tend to be saturated. The majority of species within the project area complete their reproductive cycle by late June; thus, the positive effects on upland vegetation and plants of decreased trampling and herbivory would be most apparent in those years when livestock grazing is deferred from spring to summer or fall. A number of special status animal species are known or expected to occur in the area, including sage-grouse, one or more species of bats and Neotropical migratory birds, and a diversity of other wildlife species, including elk, mule deer, mountain lion, several species of raptors and other nongame animals (USDI BLM, 1999b).

Indirect effects on plants include changes in vegetation composition, non-native weed increase, altered fire regime, habitat fragmentation, and climate change. Decreased competition in a changing vegetation community from a reduction in perennial grasses and an increase in bare ground may benefit some special status plants by decreasing competition. However, the species within the project area are negatively affected by this change, as the increase in bare ground also provides opportunity for non-native weed

¹⁵⁷ Cinnabar Mountain RNA/ACEC monitoring in 2013, which is located in Boone Peak Allotment, analyzed in ACEC Sections.

invasion; however, at higher elevations, the ecosystem is more resilient to disturbances. Non-native weed invasions can also occur in high-use areas near rangeland developments, along roads and salt grounds, and at watering sources. This threat of vegetation composition change that provides opportunity for non-native weed invasion is common to all special status plants within the project area to varying degrees. Livestock create bare ground through soil disturbance and can disperse seed as they move from one area to the next. Native and special status plants can be negatively impacted by non-native weed invasion through direct competition for space, moisture, and light (Rosentreter, 1992). Susceptibility to invasion increases when adding drought (West, 1999) to disturbance followed by increased stress to the native and rare plant communities.

Fire

Global climate change may have a substantial negative impact on special status plants due to the small number of sites and the relative lack of resiliency many of these plants show in response to changing habitat conditions. According to Hawkins and others (2008) and Foden and others (2008), SSPS and rare plants will be at greatest risk to a negative response to global climate change. The altered future climate may not provide the conditions that are favorable for these species where they currently occur. Other plant species may be better adapted to the altered climate at special status plant sites. These invader species could out-compete these native plants. The cumulative impacts of climate change on endemic special status plants could lead to increasing rarity for these species.

The response of native plants to direct effects of livestock grazing also varies based on the elevation where species occur. Cinnabar Mountain RNA/ACEC is situated at a higher elevation currently; in general, higher elevation habitats receive more precipitation than lower elevation areas. Cinnabar Mountain RNA/ACEC's elevational range is 7,400 to just over 8,400 feet.

Activities excluded, prohibited, or restricted in this ACEC, as identified in the ORMP, would retain relevant and important values unchanged and protected in the cumulative effects analysis area. This would include fire effects.

3.2.7.2 Environmental Consequences of Alternatives 1 and 2

Alternative 1 would continue to authorize grazing under the same terms and conditions and the same AUMs as in the current permit (see Section 2.2.1). Flexibility in the established grazing schedule as recently implemented between 1997 and 2012 has led to the existing condition and would continue (Appendix B) if permitted. Grazing season of use would primarily include wet spring and early summer season and critical growing season use and would continue to reflect existing conditions. Cinnabar Mountain is the only RNA/ACEC in the Toy Mountain Group of the 20 allotments. It is expected that the grazing restrictions already in place for this RNA/ACEC will continue, and this high-value plant community will be protected. It is anticipated to make progress toward meeting all other Rangeland Health Standards and ORMP objectives over the life of the permit.

3.2.7.3 Environmental Consequences of Alternative 3

General impacts of livestock grazing are discussed in the Environmental Consequences Common to All Grazing Alternatives Section 3.2.4.1. Under Alternative 3, a deferred grazing system is proposed that would generally allow grazing during the spring and/or summer for 2 years, and during the fall the third year of a 3-year rotation.

Six of the Toy Mountain Group allotments contain SSPS occurrences and would be subject to the impacts described in 3.2.1.3. The impacts would vary according to the season of use. Cinnabar Mountain is the only RNA/ACEC in the Toy Mountain Group. It is expected the grazing restrictions already in place for

this RNA/ACEC will continue, and this high-value plant community will be protected, although not as much as with Alternatives 4 and 5.

3.2.7.4 Environmental Consequences of Alternative 4

The difference between Alternative 4 and Alternative 1 is the incorporation of grazing schedules in the Toy Mountain Group (Section 2.2.4) allotments that would rest and/or defer grazing outside of critical growing season use more often than any other grazing alternative considered, generally for a minimum of 2 years within a 3-year rotation. Under the grazing scheme proposed in Alternative 4 (Section 2.2.4), the impacts would vary according to the season of use.

Putting into practice increased rest and/or periodic deferment outside of critical-growing-season use is expected to increase and maintain vegetative vigor of native plant communities in this ACEC. This would positively affect native and SSPS occurrences because improved diversity and vigor of upland vegetation communities provides soil stability, appropriate hydrologic function, litter amounts, and nutrient cycling. The restricted seasons, compared to Alternative 1, would result in a decrease in active AUMs over the life of the permit (Appendix C). Upland vegetation communities would have an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to invasive weed encroachment.

Cinnabar Mountain is the only RNA/ACEC in the Toy Mountain Group allotments. It is expected the grazing restrictions already in place for this RNA/ACEC will continue, and this high-value plant community will be protected. It is anticipated to make progress toward meeting all other Rangeland Health Standards and ORMP objectives over the life of the permit. Alternative 4 would add to the already-in-place grazing restrictions to this RNA/ACEC; therefore, its progress or maintaining of the resources in this designated high-value habitat would be faster than in Alternatives 1-3.

3.2.7.5 Environmental Consequences of Alternative 5

The elimination of livestock grazing and the impacts associated with it would permit the unhindered expansion of the existing vegetation cover. Rangeland Health Standards and ORMP SSPS objectives would be met and allow for an upward trend over the life of the permit and positively affect habitat stability, productivity, and functional/structural groups over the short and long term.

Additional fuel availability from the build-up of litter and plant expansion would combine to form a more continuous fuel for wildfires than under Alternative 1 or any of the other alternatives. Under these conditions, fire in allotments with extensive invasive annual monocultures could be more difficult to contain and control than at present. The probability of extensive, stand-replacing fires increases and could adversely impact native and special status plants habitat.

3.2.8 Social and Economic Values

3.2.8.1 Environmental Consequences Common to All Alternatives

Table SOCE-10 below shows the total change in AUMs in all of the Toy Mountain Group allotments for each alternative and the value of those changes to the community, based on estimates by Darden et al (See Section 3.1.9 above); the breakdown for each allotment can be found in Appendix H.¹⁵⁸ Table SOCE-11 shows the average impact on expected 10-year net revenue for representative ranch operations, based on a detailed analysis that incorporates a sample partial enterprise budget showing the potential impact of each

¹⁵⁸ The actual totals in Table SOCE-9 may differ, since the totals for all of the alternatives assume that the same alternative would be chosen for all allotments; however, the Owyhee Field Manager may choose a different alternative for each allotment, which may result in different total impacts from the ones shown here.

alternative on that part of the enterprise affected, based on information provided by a local ranch operator that was reviewed by a BLM rangeland manager (see Explanation of Model in Appendix H). The results of this analysis are intended to represent the impacts of the alternatives on representative small, medium, and large ranch operations and are not specific to any individual ranch.¹⁵⁹ For the purposes of this analysis, a small ranch is one with fewer than 200 cattle plus 10 horses; a medium ranch is one with 200 to 500 cattle plus 10 horses, and a large ranch is one with 501 to 2,499 cattle plus 10 horses.

These values assume that the animals use all of the active use AUMs authorized. In Table SOCE-12, the results show the differences in 10-year net revenue when comparing the changes in AUMs in Alternatives 2 through 5 with the baseline AUMs in Alternative 1, and have been averaged and rounded. The figures in Tables SOCE-11 and SOCE-12 should not be construed as an estimate of the actual economic impact on actual individual ranches within the study area. Ranchers have a wide range of options available to them in terms of how they respond to changes in the permitted number of AUMs on their range allotment(s). Depending on the length of their allowed grazing season and the specific change in permitted AUMs, a rancher might choose to increase or decrease herd size, change grazing months, retain or sell animals at their headquarters, lease new ground or cancel one or more leases on private rangeland, switch to irrigated pasture, adjust feed lot contracts, completely change operation types, and so on. Given the number of uncertain variables and the range of possibilities, it is not feasible to anticipate how individual ranches will react to changes in their specific grazing permits. Also unknown are any and all associated business decisions made in response to prevailing markets, federal and state agricultural policies, and personal values.

BLM acknowledges that as a result of any changes in permitted AUMs, there are likely to be multiplier effects within the economy that serves the associated ranching community. Because it is not possible to quantify the specific monetary impacts on individual ranches, it is also not possible to accurately estimate the resulting multiplier effects. It is possible, however, to state qualitatively, for example, that a reduction in AUMs would result in a corresponding reduction in regional economic activity if ranches choose to reduce herd numbers and then in turn reduce their spending within the regional economy. The converse is also true (see this related discussion above). In addition, canceling grazing on any BLM-administered pasture for 1 or more years (e.g., resting a pasture) could impact grazing revenue brought in by the state of Idaho because any unfenced state-administered grazing land located within a rested BLM-administered pasture could not be grazed by a state grazing lessee. The state lessee could request that he or she not be charged a state grazing fee during that time, and the loss of income to the state could impact funding for other state programs.

Even if AUMs were reduced in a pasture administered by the BLM, rather than cancelled completely, there may be an economic impact to the State's endowments as a result of any management changes on allotments that reduce AUMs on BLM lands. This depends on the Idaho Department of Lands (IDL) evaluation of rangeland conditions on state lands within the BLM allotments and whether changes are warranted on these lands. If IDL chooses to add or reduce AUMs on any state lands as a response to BLM management changes, there will be economic impacts to the State's endowments; if no additions or reductions on state lands are made, the economic impact to the State's endowment may be minimal. The impacts to state lands can be analyzed only after the IDL decides whether to make management changes on state lands in response to the BLM's final decisions for the Toy Mountain Group allotments; thus, there will be no further discussion of impacts to State endowments in this EA.

¹⁵⁹ A complete analysis using this model has been conducted for each of the Toy Mountain Group allotments to inform the development of the sample small, medium, and large ranches. This analysis is available from the Idaho BLM State Office project record upon request.

Table SOCE-10: Total change in AUMs and value of AUMs to the community for all of the Toy Mountain Group allotments

Alternative	% Change in AUMs	Change in Total AUMs	Total Active AUMs	Annual Dollar Value of Change ¹	Value of AUMs to community ²
1 (No Action)	0%	0	13,795	\$0	\$923,437.30
2	34%	4,725	18,520	\$59,866	\$1,239,728.80
3	-41%	-5,693	8,102	-\$72,130	\$542,347.88
4	-67%	-9,293	4,502	-\$117,742	\$301,363.88
5 (No Grazing)	-100%	-13,795	0	-\$174,783	\$0

¹ Ten-year Average Market Value of Forage per AUM in Idaho, 2002 - 2011 (non-irrigated private ground): \$12.67

² Based on estimates by Darden et al (See Section 3.1.8 above)

A number of alternatives call for reductions in AUMs on some or all of the allotments. In some cases, as described below, some operators could incur additional costs from alternative forage options due to changes in livestock numbers or management practices. These costs could include:

- Different AUM fees: Private land AUM fees in 2011 were \$14.50/AUM in Idaho and \$14.80/AUM in Oregon, plus transportation costs. AUM fees on state-owned land in 2012 are \$5.25/AUM in Idaho and \$8.48/AUM in Oregon. The 10-year (2002-2011) average market value of an AUM in Idaho is \$12.67/AUM, which is an estimate based on survey indications of monthly lease rates for private, non-irrigated grazing land.
- Feeding hay on the ranch instead of grazing on pastures: The operators would need 780 lbs. (0.4 tons) dry forage/month for each cow and her calf if the herd were moved back to the ranch instead of to other grazing land. The 10-year (2003-2012) average price for alfalfa hay was \$138/ton in Idaho and \$148/ton in Oregon. This means that the operator would spend up to \$58/month (\$693/year) on dry forage for each cow and her calf.

There may be other costs associated with changes in livestock numbers or management practices that could affect the operators' bottom lines and the community as a whole. For example, Torell and others (2002) found that a 50 percent reduction in BLM AUMs in the Jordan Valley area resulted in a reduction in net annual ranch returns of \$2.41 per AUM removed; reductions of 75 percent and 100 percent resulted in net ranch return reductions of \$2.94 per AUM removed and \$3.44 per AUM removed (respectively). The authors also found that removing spring grazing on BLM land in the Jordan Valley area would reduce an operator's net cash income by \$24.17 per AUM removed. If the operator grazed on private pasture or fed the animals at the ranch during the spring, the negative impact would be lower (\$5.34/AUM removed) (Torell, et al., 2002). However, it is possible that one or more of the operators might find that such a large percentage of the herd would need to be moved or sold that operating the ranch would no longer be economically feasible. Any cuts in AUMs would lead to increased expenses for grazing and/or feed that could be detrimental to the viability of the ranch. This could lead to losses in jobs, income to the community, and tax revenue for the county and state. Additionally, ranching is so intimately connected to the overall culture in the areas in and around Owyhee County that the closing of a ranch would lead to a substantial loss of community cohesion. The closing of a ranch in Jordan Valley or Marsing could be viewed by community members as an adverse effect on the social conditions of the local community.

Table SOCE-11: Average impact on expected 10-year net revenue for representative ranch operations

Average Impact on Expected 10-year Net Revenue	Alt. 1 (Baseline) Expected 10-year Net Revenue	Alt. 2	Alt. 3	Alt. 4	Alt. 5
Small (< 100 Head)	\$249,982	-\$77,046.25	-\$128,410.50	\$99,160.63	-\$187,256.89
Medium (100 - 499)	\$1,177,655	\$203,006.86	-\$393,237.00	-\$524,609.57	-\$857,662.50
Large (500 - 2500 Head)	\$5,204,283	-\$2,282,394	-\$2,456,219	-\$2,853,862	-\$2,888,731

Table SOCE-12: Impact on expected 10-year net revenue for each alternative by allotment

	Alternative 1 (Baseline)		Alternative 2			Alternative 3		
Allotment	Number of Cattle	Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	Ten-year \$ Impact	% Change in Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	10-year \$ Impact	% Change in Est. 10-year Net Revenue
Alder Creek FFR	59	\$364,230	0%	-\$175,390	-48%	0%	-\$240,535	-66%
Boone Peak^	680	\$3,727,420	N/A	N/A	N/A	N/A	N/A	N/A
Box T	253	\$1,127,630	17%	\$129,396	11%	-51%	-\$410,098	-36%
Bridge Creek^	159	\$814,780	N/A	N/A	N/A	N/A	N/A	N/A
Browns Creek	209	\$1,183,220	52%	\$457,025	39%	-76%	-\$673,455	-57%
Fossil Creek & Pickett Creek*	1649	\$9,232,330	8%	-\$5,452,493	-59%	-59%	-\$3,984,594	-43%
Garrett FFR	30	\$185,030	0%	\$0	0%	\$0	-\$135,301	-73%
Hart Creek	557	\$3,167,250	75%	\$887,706	28%	-23%	-\$927,844	-29%
Josephine FFR	20	\$123,580	0%	\$0	0%	\$0	\$0	0%
Lone Tree	302	\$1,644,810	62%	\$756,614	46%	-24%	-\$294,682	-18%
Louisa Creek	309	\$1,394,480	4%	\$38,390	3%	-43%	-\$422,294	-30%
Meadow Creek FFR	46	\$283,900	0%	-\$195,434	-69%	\$0	-\$200,445	-71%
Moore FFR	47	\$290,080	0%	-\$190,423	-66%	0%	-\$190,423	-66%

	Alternative 1 (Baseline)		Alternative 2			Alternative 3		
Allotment	Number of Cattle	Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	Ten-year \$ Impact	% Change in Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	10-year \$ Impact	% Change in Est. 10-year Net Revenue
Munro FFR	15	\$92,690	0%	-\$65,145	-70%	0%	-\$65,145	-70%
Quicksilver FFR~	12	\$74,150	N/A	N/A	N/A	N/A	N/A	N/A
Red Hill FFR*	46	\$283,900	0%	\$0	0%	0%	-\$205,457	-72%
Red Mountain^	810	\$4,690,130	N/A	N/A	N/A	N/A	N/A	N/A
Stahle FFR~	34	\$209,750	N/A	N/A	N/A	N/A	N/A	N/A
Steiner FFR	96	\$592,510	0%	\$10,022	2%	0%	\$10,022	2%
Toy	177	\$938,800	50%	-\$268,223	-29%	-58%	-\$168,491	-18%
West Castle	177	\$997,930	54%	-\$256,813	-26%	8%	-\$406,751	-41%
Whitehorse/Antelope	298	\$1,319,590	140%	\$564,659	43%	-16%	-\$376,888	-29%

	Alternative 4 ¹			Alternative 5		
Allotment	% Change in Total AUMs over 10 Years	Ten-year \$ Impact	% Change in Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	10-year \$ Impact	% Change in Est. 10-year Net Revenue
Alder Creek FFR	-8%	\$52,596	14%	-100%	-\$277,020	-76%
Boone Peak^	N/A	N/A	N/A	-100%	-\$2,770,185	-74%
Box T	-80%	-\$633,876	-56%	-100%	-\$797,853	-71%
Bridge Creek^	N/A	N/A	N/A	-100%	-\$596,733	-73%
Browns Creek	-76%	-\$673,455	-57%	-100%	-\$885,185	-75%

Allotment	Alternative 4 ¹			Alternative 5		
	% Change in Total AUMs over 10 Years	Ten-year \$ Impact	% Change in Est. 10-year Net Revenue	% Change in Total AUMs over 10 Years	10-year \$ Impact	% Change in Est. 10-year Net Revenue
Fossil Creek*	-82%	-\$4,370,917	-47%	-100%	N/A	N/A
Garrett FFR	0%	-\$35,078	-19%	-100%	-\$140,705	-76%
Hart Creek	-56%	-\$1,336,806	-42%	-100%	-\$2,371,559	-75%
Josephine FFR	70%	Yr1: \$105,896; Yr2&3: \$201,108	Yr1: 86%; Yr2&3: 163%	-100%	-\$94,010	-76%
Lone Tree	-46%	-\$553,271	-34%	-100%	-\$1,220,761	-74%
Louisa Creek	-71%	-\$701,401	-50%	-100%	-\$989,950	-71%
Meadow Creek FFR	0%	Yr1&2: - \$90,200; Yr3: -\$150,334	Yr1&2: - 32%; Yr3: -53%	-100%	-\$215,913	-76%
Moore FFR	-17%	Yr1: - \$132,816; Yr2&3: \$172,864	Yr1: - 46%; Yr2&3: 60%	-100%	-\$220,614	-76%
Munro FFR	-50%	Yr1: - \$13,480; Yr2&3: \$196,987	Yr1: - 15%; Yr2&3: 213%	-100%	-\$70,508	-76%
Quicksilver FFR	N/A	N/A	N/A	-100%	-\$56,406	-76%
Red Hill FFR	0%	\$165,368	58%	-100%	N/A	N/A
Red Mountain	N/A	N/A	N/A	-100%	-\$3,524,448	-75%
Stahle FFR	N/A	N/A	N/A	-100%	-\$159,507	-76%
Steiner FFR		Y1: \$21,763; Y2: \$472,765; Y3: \$56,841	Y1: 4%; Y2: 80%; Y3: 10%	-100%	-\$450,629	-76%
Toy	-73%	-\$354,771	-38%	-100%	-\$692,835	-74%
West Castle	-28%	-\$210,798	-21%	-100%	-\$745,951	-75%
Whitehorse/Antelope	-41%	-\$544,695	-41%	-100%	-\$932,032	-71%

^ The Boone Peak, Bridge Creek, and Red Mountain allotments were broken up to create the Fossil Creek and Pickett Creek allotments, as noted in Sections 2.4.2, 2.4.4, and 2.4.15.

~ The Quicksilver FFR and Stahle FFR allotments were broken up to create the Red Hill FFR allotment, as noted in Sections 2.4.14 and 2.4.16.

* Estimates of impacts for Alternatives 2 through 4 in these new allotments were developed by comparing AUMs and cattle numbers for Alternatives 2 through 4 to the total AUMs and cattle numbers in the original allotments in Alternative 1. Thus, the additions or reductions in AUMs or cattle (and related impacts) for the Fossil Creek and Pickett Creek allotments are based on comparisons of the numbers in Alternatives 2 through 4 for these new allotments to the total numbers in the Boone Peak, Bridge Creek, and Red Mountain allotments in Alternative 1. The same comparison has been made with the total numbers in the Quicksilver FFR and Stahle FFR allotments for Alternative 1 and the numbers in the Red Hill FFR allotment for Alternatives 2 through 4.

3.2.8.2 Environmental Consequences of Alternative 1

Under Alternative 1, grazing permits for the 19 allotments of the Toy Mountain Group would be renewed consistent with the summarized actions that have led to the current conditions. Authorized active use in each of the 19 allotments would be consistent with the maximum actual use that has been made recently. When the current situation for any of the 19 allotments in the Toy Mountain Group closely matched the terms and conditions of the existing permit, the current situation alternative is equivalent to the current permit terms and conditions or a no action alternative. Thus, under Alternative 1, permits to graze livestock on the 19 Toy Mountain Group allotments would be renewed with the terms and conditions of either the maximum actual use or the permits currently in effect. For these allotments, there would be no change in livestock management, operations would continue with business as usual, and there would be no additional socioeconomic impact to the ranches. All of the ranches would continue contributing to employment and the purchase and sale of goods and services in the counties where they are located.

3.2.8.3 Environmental Consequences of Alternative 2

Appendix C-1 and Section 3.2.1.3 in the Upland Vegetation/Noxious Weeds Section describe the management changes on the allotments for Alternative 2. Table SOCE-12 in Section 3.2.8.1 shows the differences in 10-year net revenue on each of the allotments for Alternative 2, compared to the estimated 10-year net revenue for Alternative 1.

3.2.8.4 Environmental Consequences of Alternative 3

Appendix C-1 and Section 3.2.1.4 in the Upland Vegetation/Noxious Weeds Section describe the management changes on the allotments for Alternative 3. Table SOCE-12 in Section 3.2.8.1 shows the differences in 10-year net revenue on each of the allotments for Alternative 3, compared to the estimated 10-year net revenue for Alternative 1. Grazing dates in Alternative 3 are based on a similar season of use and pasture days that the permittees submitted (see Alternative 2 for each allotment in Section 2.4), but with additional consideration for resource constraints. Impacts from any changes will be described in Section 3.3 below.

3.2.8.5 Environmental Consequences of Alternative 4

Appendix C-1 and Section 3.2.1.5 in the Upland Vegetation/Noxious Weeds Section describe the management changes on the allotments for Alternative 4. Table SOCE-12 in Section 3.2.8.1 shows the differences in 10-year net revenue on each of the allotments for Alternative 4, compared to the estimated 10-year net revenue for Alternative 1. Alternative 4 incorporates more rest on some pastures every 1 in 3 years, with AUM reductions of 0 to 33 percent on these allotments. This means that the ranch operators would need to either feed the animals on the ranch or move them to other private, state, or federal grazing lands during the time these pastures are rested, if other pastures in the allotment cannot be used. This could have a substantial impact on the ranch operators and the local economy, as noted in Section 3.2.9.1. The management changes in Alternative 4 are intended to provide for improvement in vegetation

conditions across the landscape, which could, in turn, provide for long-term improvement in forage for livestock.

3.2.8.6 Environmental Consequences of Alternative 5

This alternative would cancel all authorized use AUMs on the allotment for a period of 10 years, after which applications for grazing permits would be accepted. Table SOCE-12 in 3.2.8.1 shows the differences in 10-year net revenue on the allotment for Alternative 5, compared to the estimated 10-year net revenue for Alternative 1. This would likely have a substantial socioeconomic impact on the ranch operators, the people they employ, the businesses where the operators purchase supplies, and the communities that are supported by livestock operation activities (see Section 3.2.8.1 for a discussion of some specific impacts). The ranchers would have to relocate their livestock to other private or state land, possibly outside of Owyhee County, sell their livestock, and/or close the ranch completely. The ranchers already likely purchase supplies from stores closer to the new grazing locations, so income from taxes and sales in these communities would drop and the income from the livestock sales would go to the counties where the base ranches are located. The people previously employed by the ranches would have to look for new jobs if any of the ranches closed; the agricultural sector in both counties is large enough that they may not have much trouble finding similar work elsewhere, but they may have to relocate or commute long distances, which could be costly. Finding work in other sectors may be difficult because unemployment is so high. The greatest loss to the local communities as a result of ranch closures would be the loss of social cohesion. As noted above, researchers have found that ranchers have more social networks throughout the community, and closing a ranch can lead to a disruption in these networks.

However, not all socioeconomic impacts could be negative. Land on the allotments could be more available for recreational opportunities, which could bring more money to the stores, restaurants, and hotels that provide goods and services for people from the Treasure Valley who come to hunt, fish, camp, boat, and watch wildlife throughout the Owyhee Mountains. This could also provide more employment opportunities in other sectors throughout the county. However, as noted in the ORMP EIS (USDI BLM, 1999b), the number of businesses that provide recreational goods and services in Owyhee County is minimal. Most residents, as well as those visiting from other counties, purchase their goods outside of Owyhee County. Thus, although some recreation fees could be collected, the influx of recreation to the county would not add much to the revenue from sales or taxes there and could actually negatively affect the financial resources of the county through additional requests for help in the backcountry. In addition, the management changes in Alternative 5 are intended to provide for improvement in vegetation conditions across the landscape, which could, in turn, provide for long-term improvement in forage for livestock.

3.2.9 Cultural and Paleontological Resources

3.2.9.1 Environmental Consequences Common to All Alternatives

Direct impacts that may occur as a result of livestock grazing and could affect cultural resources include breakage and modification to artifacts and features, vertical and horizontal displacement, and toppling and modification of standing objects (Coddington, 2008) (Broadhead, 1999) (U.S. Army, 1990). Indirect effects include biomass reduction that could increase the potential for erosion of the site matrix, looting due to greater visibility from vegetation removal, and soil compaction. The presence and magnitude of these impacts are used to analyze the effects of livestock, if any, to cultural properties. Damage or loss of artifacts and features could affect important attributes that qualify a site as eligible for the NRHP. The effects caused by livestock to sites can be exacerbated by soil composition, soil moisture and animal concentration. Areas of congregation such as, salting locations, troughs, springs, reservoirs and other watering spots have the greatest potential to realize these impacts and are the focus of these analyses. Eligible sites at or in close proximity to these areas may be monitored and, if necessary, protective

measures may be instigated. Mitigation measures may include, but are not limited to, enclosure fencing, removal or relocation of range improvements, decommissioning of facilities to eliminate animal congregating, removal of natural attractants, suspension of grazing, changes in the seasons of grazing, or other actions deemed suitable to protect the resource by the land manager and in consultation with the State Historic Preservation Office (SHPO). Typically, the greater the dispersion of livestock and other grazing animals across the landscape, the less likely a site will experience any significant negative consequences. While disturbances to subsurface cultural deposits are generally the greatest threat to the resource, the overall analyses of cultural resources for this allotment group reveal that effects from grazing are surficial in nature. In the Toy Mountain Group allotments, impacts from livestock trampling do occur at some site locations, but there are no adverse effects to historic properties.

Paleontological Resources

The effects to paleontological resources are similar to those discussed for cultural resources. Breakage, displacement and the consequences related to biomass reduction are the primary areas of concern. With a very limited area of fossil-bearing strata lying beneath the allotments and the absence of fossil sites at or in proximity to any identified potential areas of livestock congregation, no effects to paleontological resources are expected in the allotment group. No further discussion will be given to this resource.

3.2.9.2 Environmental Consequences of Alternative 1

Alternative 1 would renew the grazing permit under the present terms and conditions of the expiring permit. This alternative would apply to all seven allotments. Stocking levels and seasons of use would remain the same as currently permitted and no range improvements or other projects are proposed. In general, any unmitigated, grazing-related impacts to sites would continue, particularly in congregation areas, but are more likely to occur during the spring when soil moisture is higher and can facilitate compaction, transport and other disturbances to artifacts and features. Allotment-specific effects and any needed mitigation or protection measures for cultural resources are discussed in Section 3.3.

3.2.9.3 Environmental Consequences of Alternative 2

The consequences of the applicants' proposed alternative can vary depending on what changes are offered and in which allotment. Alterations to stocking levels and seasons of use can positively or negatively affect cultural resources. Impacts to resources can be the same as those discussed in 3.2.9.1 and those under Alternative 1. Allotment-specific effects and any needed mitigation or protection measures for cultural resources are discussed in Section 3.3.

3.2.9.4 Environmental Consequences of Alternative 3

This alternative has the potential to lessen the actual or possible effects to historic properties by reducing livestock numbers, altering or modifying the season of use or both within an allotment. These actions could better disperse livestock and shorten the time animals have to congregate. Both results could work to decrease the possible negative effects cultural resources face from domestic grazing.

3.2.9.5 Environmental Consequences of Alternative 4

The effect of this alternative is the same as Alternative 3 but with more intensity as livestock numbers could be more greatly reduced and/or the season of use could be further curtailed. The potential negative effects to cultural resources would likely be reduced more than in Alternative 2.

3.2.9.6 Environmental Consequences of Alternative 5

The absence of livestock grazing within the allotments would eliminate all effects to cultural resources from livestock grazing activities.

3.3 Allotment-specific Affected Environment and Environmental Consequences

3.3.1 Alder Creek FFR Allotment

3.3.1.1 Alder Creek FFR Allotment Affected Environment

3.3.1.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-5 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Alder Creek FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, are provided in Appendix E.

Table VEG-5: Ecological sites mapped for the Alder Creek FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	89
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	119
¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	48
¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	15
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	17
¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	208
¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	28
Alder Creek FFR total acres		525

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-5 above, the vegetation inventory for the Alder Creek FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production

of plant species present at the inventoried site. Table VEG-6 is a summary of ecological condition within the Alder Creek FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-6: Ecological condition for public lands in Alder Creek FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Alder Creek FFR Allotment (0639)	0%	100%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With less than 40 percent of the allotment in late seral condition, the objective to improve vegetation health/condition applies to the Alder Creek allotment.

Additionally, current vegetation in the Alder Creek FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-7.

Table VEG-7: Current vegetation in the Alder Creek FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	2	0%
BIG SAGE	439	25%
BIG SAGE MIX	43	2%
BITTERBRUSH	1	0%
BUNCHGRASS	383	22%
CONIFER	4	0%
EXOTIC ANNUAL	34	2%
GREASEWOOD	0	0%
JUNIPER	121	7%
LOW SAGE	219	12%
MOUNTAIN BIG SAGE	258	15%
MOUNTAIN SHRUB	27	2%
RABBITBRUSH	5	0%
SALT DESERT SHRUB	0	0%
SEEDING	1	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%

Vegetation Cover Type	Acres	Percent of Allotment
WET MEADOW	226	13%
UNKNOWN/NO DATA	0	0%
Total:	1,762	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-5 and VEGE-6. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, the more recent PNNL data indicate a range of vegetation communities dominated by species present at reference conditions. These include sites with a dominance of sagebrush and other sites that are primarily grassland dominated. Wet Meadow sites identified in PNNL data are located on private land not included in ecological site data. Juniper is currently the dominant component of a portion of the landscape in the Alder Creek allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain shrubs, mountain big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory. Ecological site descriptions for the Alder Creek allotment identify that juniper has the potential to invade a number of ecological sites.

Rangeland Health Standards

The Idaho Standard for Rangeland Health Standard 4 (Native Plant Communities) is not met in the Alder Creek FFR allotment. The rangeland health assessment at one site in 2002 identifies a slight-moderate departure of biotic integrity, although with functional/structural groups that lack co-dominance by deep-rooted perennial bunchgrasses in association with mountain big sagebrush. The 2002 rangeland health assessment identifies a great departure from reference site production levels for deep-rooted decreaser bunchgrasses, an increase in shallow-rooted bunchgrasses, and the dominance of shrubs at a level greater than reference site conditions. A partially completed assessment in 2005 does not conflict with the more thorough 2002 assessment in that it identifies departure of rangeland health indicators for biotic integrity in the none-to-slight through moderate categories. Juniper occurrence was noted as scattered to common throughout the site, a product of altered fire regimes from natural levels of disturbance. This assessment information leads to the conclusion that altered functional/structural groups do not provide for proper nutrient cycling, hydrologic cycling, or energy flow.

Current livestock management practices include grazing of upland vegetation communities during the active growing season (May-June) annually. Annual growing season livestock grazing use has resulted in a decline in the frequency of desirable deep-rooted perennial bunchgrass species. Current livestock management practices are a causal factor contributing to the failure to meet Standard 4, in addition to historic livestock use that led to the loss of deep-rooted perennial bunchgrasses. Juniper encroachment is also a causal factor in failing to meet the Standard.

Failure to meet Standard 4 within the Alder Creek FFR allotment means that the ORMP management objective to improve unsatisfactory vegetation health/condition on all areas is not met. Appropriate livestock management practices can be implemented to allow progress toward meeting the ORMP vegetation management objective and attaining progress toward reference-site vegetation communities with a co-dominance of deep-rooted perennial bunchgrasses and shrubs. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhart &

Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequently as 2 of every 3 years or more often.

To summarize, the Alder Creek allotment is not meeting Standard 4-Native Plant Communities as a result of current livestock grazing use during the active growing season for upland vegetation communities. In addition, historic grazing practices contributed to a decline in the dominance by deep-rooted native bunchgrass species and the corresponding failure to meet the standard. Because current livestock management practices are not conducive toward maintaining or improving upland native bunchgrass vigor, the ORMP vegetation management objective to improve unsatisfactory vegetation health/condition is not met in the Alder Creek FFR allotment.

3.3.1.1.2 Soils

Current livestock grazing management practices are significant causal factors for not meeting upland watershed Standard 1 in the Alder Creek FFR allotment. Signs of increased erosion, such as water flow patterns and historic and active pedestaling, indicate decreased watershed function. Soil surface resistance to erosion is reduced, especially where native deep-rooted bunchgrasses are missing and where interspaces are not stabilized by persistent cover. This is especially important on granitic soils due to their erosive nature and the steep topography that dominate much of the higher elevations of the allotment.

Additional declines in soil stability are associated with mechanical damage from hoof action, increased water flow patterns, and reduced microbiotic crusts. Junipers do not appear to be driving negative hydrologic functions at this site, although the potential for continued invasion is apparent.

The decreased ecological function, impaired soils, and repeated spring use in the absence of rest indicate that soil and hydrologic function are compromised. Livestock management is the primary contributing factor for not meeting Standard 1 and ORMP soil management objectives of improving unsatisfactory watershed health/conditions in the Alder Creek FFR allotment.

3.3.1.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁰

Standards 2 and 3 are not being met in the Alder Creek FFR allotment. The reach of Alder Creek that traverses BLM lands in the allotment was most recently rated PFC (Table RIPN-13) because the stream was protected and armored with large boulders and dense willows. However, a MMIM site was established on the same reach, and the median stubble height was 4.0 inches, the bank alteration was 37 percent, and the woody use was 75 percent. These short-term indicators indicate impacts associated with livestock use were exceeding appropriate limits. One unnamed seep was assessed FAR in 2013 because the flow patterns had been altered by excessive trampling and there was heavy use of riparian vegetation.

¹⁶⁰ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Hart Creek (0532), Box T (0534), and Alder Creek FFR (0639) Allotments* document on the BLM Group 3 website or available upon request from the Owyhee Field Office

Table RIPN 14: Alder Creek allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Alder Creek Miles	0.5 (FAR-2000) (PFC-2008)	bank disturbance and instability where accessible to livestock/ stream is rock armored and willowed providing vertical and lateral stability	0.5

MMIM Metrics				
Stream Name	Assessment Year	Median Stubble Height (inches)	Bank Alteration (%)	Woody Use (%)
Alder Creek	2008	4.0	37	75

Springs Assessed, Condition, & Issues Identified			
Spring Name	Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Seep	2013	FAR	flow alteration from trampling/ excessive removal of riparian veg/

Standard 7 is being met in the Alder Creek allotment. For IDEQ water quality information associated with the Alder Creek FFR allotment, see table RIPN-3.

3.3.1.1.4 Special Status Plants

As previously stated in Chapter 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.1.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Alder Creek FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013e).

Alder Creek FFR consists of a single pasture dominated by shrub steppe with one perennial creek, Alder Creek. Multiple factors are limiting the qualities of these habitats and preventing the allotment from meeting Standard 8; current livestock practices are significant factors.

Table WDLF-1: Focal habitats that are present on the Alder Creek FFR allotment and whether current conditions within the pasture are limiting the quality of those habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	-Reduced composition of deep-rooted perennial grasses. -More shrubs than expected for reference condition. -Juniper is beginning to encroach on shrub steppe habitat.
Riparian habitats Alder Creek	Limiting	- Stream bank alteration where accessible to livestock. -Over utilization of riparian vegetation.

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
		-Redband trout are present. -Spotted frogs are not present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	-Inadequate canopy cover and height of deep-rooted perennial grasses and forbs -Juniper encroachment into sage-grouse habitat. -Increased canopy cover of cheatgrass.

3.3.1.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.1.1.7 Cultural Resources

There are no previously recorded cultural resources sites within the Alder Creek FFR allotment. There are two potential livestock congregation areas identified in the allotment, and contract personnel completed surveys for cultural resources at each one. One survey discovered no cultural resources, but the other resulted in the recording of a prehistoric lithic scatter. The site, temporary number 13-O-18-P009, has experienced surficial trampling of less than 10 centimeters deep and the location has been used for illegal dumping. The site is recommended not eligible for the NRHP.

3.3.1.2 Alder Creek FFR Allotment Environmental Consequences

3.3.1.2.1 Alternative 1

3.3.1.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment from Mid-April to mid-June, the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Impacts to cool-season bunchgrass species from annual active growing season use would continue to limit health and vigor of bunchgrass species and forbs, as detailed in Appendix E.

On land within the allotment that includes significant private land ownership (no more than 30 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the intensity of grazing use is less than established limits, that use during the active growing season would lead to adverse impacts to vegetation resources.

The allotment would continue to fail to meet Standard 4 due to current livestock management practices that include annual active growing season use as identified in the 2013 determination. The ORMP objective to improve unsatisfactory vegetation health and condition would also not be met.

3.3.1.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions that have led to the failure to meet Standard 1 and ORMP objectives (Section 3.1.2) and would provide little to no improvement to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts from current and historic livestock

grazing exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.1.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.1.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.1.1), the Alder Creek FFR allotment would be available to grazing year-round annually without rest or riparian constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.7 mile of perennial and 0.1 mile of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix D) indicates that the FFR has primarily been used during the spring and early summer; therefore, the impacts of spring and summer grazing would likely continue to be most prevalent under Alternative 1.

The Alder Creek FFR allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Since the allotment would be used during the same seasons, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.1.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.1.2.1.5 Wildlife and Special Status Animals

Upland habitat

This allotment would continue to be grazed during the active growing season every year. Cover and forage from deep-rooted perennial grasses would continue to be under-represented within the allotment. Cover and forage from juniper would continue to increase in density within the allotment. Shrub steppe-dependent species habitat would decrease, while woodland-dependent species habitat would increase.

Riparian habitat

Redband trout are known to occur within Alder Creek but have not been identified within the 0.6 miles of Alder Creek that are on public land within this allotment. This habitat was rated in PFC and is not considered an impaired water body by IDEQ; therefore, it should be providing suitable habitat for riparian-dependent wildlife species. However, heavy utilization of woody and herbaceous species combined with a high percentage of bank alteration suggest that current grazing practices are reducing cover and shade and adding sediment to Alder Creek. Under this alternative, redband trout habitat in Alder Creek would continue to be at risk of increased temperatures from reduced shading and sedimentation. Livestock are also grazing near and using Alder Creek for water during the redband trout spawning season, which can result in trampling of redds (Gregory & Gamett, 2009). Grazing during the hot season would continue to decrease the vigor and reproductive capability of riparian plant species. Nesting, hiding, and escape cover for riparian wildlife species would continue to be reduced by heavy grazing.

Sage-grouse

As identified in the affected environment, the sagebrush habitat on this allotment does not provide the necessary canopy cover or height from deep-rooted perennial grasses (Idaho fescue and blue bunch wheatgrass) and perennial forbs to be productive sage-grouse breeding habitat (Connelly, Schroeder, Sands, & Braun, 2000). Under this alternative, the grazing practices that resulted in reduced herbaceous cover in sage-grouse breeding habitat would continue to be allowed. The sagebrush habitats on the Alder

Creek FFR would continue to provide inadequate cover in breeding habitat for sage-grouse. Grazing on grasses like bluebunch wheatgrass while they are actively growing, year after year, reduces their growth and reproductive capability (Blaisdell & Pechanec, 1949). This results in smaller existing plants and fewer new plants becoming established and, if continued, could result in the loss of these grasses from the area. Riparian habitats are an important part of sage-grouse summer habitat and the heavy utilization and bank alteration that are occurring on Alder Creek are reducing the abundance of native forbs on which sage-grouse rely. This allotment would continue to not meet Standard 8.

3.3.1.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.1.2.1.7 Cultural Resources

There is one cultural site within a 100-meter radius of a livestock congregation area. The site is experiencing light trampling and it is not considered eligible for the NRHP. No known historic properties would be affected by this alternative.

3.3.1.2.2 *Alternative 2*

3.3.1.2.2.1 Vegetation

The season of use identified under Alternative 2 is between April 1 and mid-June, although flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment from Mid-April to mid-June, the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Impacts to cool-season bunchgrass species from annual active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E.

On land within the allotment that includes significant private land ownership (no more than 30 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the intensity of grazing use is less than established limits, that use during the active growing season would lead to adverse impacts to vegetation resources.

The allotment would continue to fail to meet Standard 4 due to current livestock management practices that include annual active growing season use, as identified in the 2013 determination. The ORMP objective to improve unsatisfactory vegetation health and condition would also not be met.

3.3.1.2.2.2 Soils

Under Alternative 2, livestock grazing in the Alder Creek FFR allotment would take place every year in the spring at the discretion of the permittee; this alternative differs little from Alternative 1. Physical impacts during the wettest period would continue and repetitive growing-season use would not increase the ability of native plant communities to provide for soil stability. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2, compared to Alternative 1 (see Section 3.2.2.3).

3.3.1.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.1.2), the Alder Creek FFR allotment would be available to grazing during the spring and early summer annually (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.7 mile of perennial and 0.1 mile of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and summer

seasons of grazing. Recent actual use reported (Appendix B) indicates that the FFR has primarily been used during the spring and early summer, and Standards are not being met.

The Alder Creek FFR allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Under Alternative 2, the allotment would be managed with a defined season of use that would remove the flexibility available on the current permit. However, the allotment would be used during the same seasons as those identified in recent actual use reports. Although the allotment would maintain conditions, it would continue to not meet the riparian-wetland Standards under this alternative.

3.3.1.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.1.2.2.5 Wildlife and Special Status Animals

Alternative 2 is essentially identical to the grazing practices described in Alternative 1, the current situation. This alternative would result in the same impacts to special status species and wildlife and their habitats that were described under Alternative 1. Under Alternative 2, this allotment would not make progress toward meeting Standard 8.

3.3.1.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. The effects would be essentially the same as those from Alternative 1.

3.3.1.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.1.2.3 Alternative 3

3.3.1.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 1 of 3 years. In addition, the intensity of grazing use would not exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30. In combination, limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 1 in 3 years of would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be made toward meeting Standard 4, as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.1.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from a minimum of 1 out of 3 years of deferment from critical growing season use and from summer riparian grazing. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, reduced susceptibility to accelerated erosion, and would lessen concentrated summer use on upland soils that surround riparian areas. Alternative 3 also defines grazing periods and would not leave the season of use open, although livestock numbers would continue to be at the permittee's discretion. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though the allotment would not improve as rapidly as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.1.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.1.3), the Alder Creek FFR allotment would be available to grazing during the summer and fall for 2 years and during the spring plus fall for the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.7 mile of perennial and 0.1 mile of intermittent/ ephemeral stream would be affected by the impacts associated with spring, summer, and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that the FFR has primarily been used during the spring and early summer, and Standards are not being met.

The Alder Creek FFR allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Under Alternative 3, the allotment would be managed under a defined season of use that would incorporate one year of riparian area constraint period deferment over the course of a 3-year rotation. This alternative proposes to use the allotment during the same seasons as those identified in recent actual use reports. Other mandatory terms and conditions of the permit under this alternative would include measures that would reduce impacts (stubble height, woody browse, and bank alteration) associated with the riparian areas condition. Therefore, the riparian areas within the allotment would make progress toward meeting Standards and ORMP objectives under this alternative.

3.3.1.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.1.2.3.5 Wildlife and Special Status Animals

Upland habitat

Under this alternative, livestock grazing would not occur during the active growing season 1 out of 3 years. This would allow bunchgrasses and perennial forbs to better establish and reproduce in that year. Grazing of these bunchgrasses after the spring growing season has been shown to have little effect on their vigor and reproductive capability (Blaisdell & Pechanec, 1949). Grazing in the active growing season would occur 2 in 3 years, which would limit the vigor and reproductive capability of bunchgrasses, but much less than the current situation of grazing in the critical growing season every year. Utilization constraints would be implemented to mitigate the effects of grazing during the active growing season. The increased tall bunchgrass and perennial forb canopy cover would improve the habitat complexity and structure for migratory birds and other wildlife in the allotment.

Riparian habitat

Grazing would not occur during the redband spawning season (3/15 to 6/15) 1 out of 3 years. This would allow for higher spawning success in that one year as the risk of livestock trampling redds would be removed (Gregory & Gamett, 2009). However, livestock would be allowed to graze the riparian habitat in the hot season 1 in 3 years, when they are most likely to loaf in riparian areas. Stubble height, utilization, and bank alteration limits would be implemented to mitigate effects of hot-season grazing. Hot-season deferment 2 of 3 years and use limits would allow the riparian habitat would remain in functional condition and continue to provide habitat for redband trout and other riparian dependent species.

Sage-grouse habitat

As the abundance and vigor of tall bunchgrasses and perennial forbs increase on the allotment the quality of the sage-grouse habitat should also improve. Increased cover and forage from bunchgrasses and perennial forbs would result in increased nesting success and brood survivorship. Juniper would continue to encroach into sage-grouse habitat and eventually would begin to limit the quality of that habitat by decreasing shrub, grass, and forb cover and abundance. Juniper encroachment would increase perching

sites for sage-grouse predators. Cheatgrass would remain common in the allotment and could limit the responses from deep-rooted perennial grasses and forbs due to competition.

Under Alternative 3, the Alder Creek FFR allotment would progress toward meeting Standard 8.

3.3.1.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. A shorter grazing season and deferred grazing in some years may require additional labor or feeding costs, but fewer cattle could lead to lower labor or feeding costs, but also less revenue from the sale of animals.

3.3.1.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.1.2.4 Alternative 4

3.3.1.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 2 of 3 years. In addition, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 10 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.1.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be made toward meeting Standard 4, as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.1.2.4.2 Soils

Alternative 4 Alternative 4 would provide a minimum of 2 out of 3 year deferment or rest that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from reduced critical growing season use and riparian grazing that promotes the ability of native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion, and lessen concentrated use on upland soils that surround riparian areas.

In addition, stocking rates would be adjusted to sustain resource values and livestock numbers are more clearly defined to identify the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock over a shorter amount of time and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.1.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.1.4), the Alder Creek FFR allotment would be available to grazing during the spring for 1 year and during the fall for 2 years over a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.7 mile of perennial and 0.1 mile of intermittent/ephemeral stream would be affected by the impacts associated with spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that the FFR has primarily been used during the spring and early summer, and Standards are not being met.

The Alder Creek FFR allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Under Alternative 4, the allotment would be managed with a defined schedule that would incorporate 2 years of riparian area constraint period deferment over the course of a 3-year rotation. Additionally, the changes in season of use would result in a 13 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would make progress toward meeting the riparian-wetland related Standards and ORMP objectives under this alternative.

3.3.1.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.1.2.4.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 4, livestock would graze the allotment during the active growing season 1 in 3 years. In the other 2 years, grazing would be restricted to late fall, when it has little effect on the vigor or reproductive capability of perennial grasses and forbs. The vigor and reproductive capability of deep-rooted perennial grasses and forbs would improve over the current situation, and over time, deep-rooted perennial grass and forb abundance would increase.

Riparian

Grazing would not occur during the hot season in any year. Woody and herbaceous vegetation would grow, reproduce, and establish more quickly without grazing during the hot season, and riparian habitats would expand and become more stable. Roots from expanding riparian vegetation would stabilize streambanks and reduce erosion. This would allow riparian habitats to quickly develop to their potential and provide improved habitat quality riparian dependent species. Expanding riparian vegetation with increased vigor would become more complex and extensive and provide more niches for riparian dependent wildlife species.

Sage-grouse

Increased cover and forage from deep-rooted perennial grasses and forbs would provide more potential nest sites and hiding cover and would improve nesting and brood-rearing success. Juniper would continue to encroach into sage-grouse habitat and eventually would begin to limit the quality of sage-grouse habitat by decreasing shrub, grass, and forb cover and abundance. Juniper encroachment would increase perching sites for sage-grouse predators. Cheatgrass would remain common in the allotment and could limit the responses from deep-rooted perennial grasses and forbs due to competition.

Under Alternative 4, Alder Creek allotment would progress toward meeting Standard 8 more quickly than under Alternative 3.

3.3.1.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. A shorter grazing season, deferment, a different pasture rotation each year in a 3-year cycle, and additional cattle may require additional labor or feeding costs. Additional cattle could lead to increased revenue from the sale of animals, however.

3.3.1.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.1.2.5 Alternative 5

3.3.1.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided the opportunity to regain health and vigor. Progress would be made toward meeting Standard 4, as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.1.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.1.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.1.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.1.2.5.5 Wildlife and Special Status Animals

Under this alternative both riparian and upland habitats would be rested from grazing completely for 10 years. This would allow bunchgrasses and perennial forbs to reproduce and establish and improve the quality of sage-grouse habitat by increasing the canopy cover of tall perennial grasses and perennial forbs. This alternative would remove livestock as a competitor within the ecosystem and wildlife habitat would improve. Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. Under Alternative 5, Alder Creek allotment would progress toward meeting Standard 8.

3.3.1.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.1.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.2 Boone Peak Allotment

3.3.2.1 Boone Peak Allotment Affected Environment

3.3.2.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-8 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Boone Peak allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-8: Ecological sites mapped for the Boone Peak allotment

Ecological Site	Dominant Species Expected	BLM acres
DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	1,400
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	519
¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	1,865
¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	4,007
¹ MOUNTAIN RIDGE 14-18 ARAR8/FEID	low sagebrush; Idaho fescue	1,428
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	236
Boone Peak total acres		9,455

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-8 above, the vegetation inventory for the Boone Peak allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-9 is a summary of ecological condition within the Boone Peak allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-9: Ecological condition for public lands in Boone Peak allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Boone Peak Allotment (0589)	55%	20%	25%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE 1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early

seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Boone Peak allotment.

Additionally, current vegetation in the Boone Peak allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-10.

Table VEG-10: Current vegetation in the Boone Peak allotment, based on PNNL data, as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	376	3%
BIG SAGE	190	1%
BIG SAGE MIX	11	0%
BITTERBRUSH	84	1%
BUNCHGRASS	702	5%
CONIFER	1,034	7%
EXOTIC ANNUAL	87	1%
GREASEWOOD	0	0%
JUNIPER	4,405	29%
LOW SAGE	518	3%
MOUNTAIN BIG SAGE	4,300	29%
MOUNTAIN SHRUB	2,812	19%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	2	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	421	3%
UNKNOWN/NO DATA	0	0%
Total:	14,945	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-8 and VEGE-9. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a portion of the landscape in the Boone Peak allotment. Current juniper dominance within some ecological sites can be compared to the limited presence of small inclusions within vegetation communities which, at potential, would support dominant mountain shrubs, mountain big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

Other than the encroachment by juniper, the broad-scale information present within PNNL data identify a range of variability of vegetation communities consistent with species present within vegetation communities that represent the reference site communities.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is met in the one-pasture Boone Peak allotment with, at most, slight to moderate departure of biotic integrity from reference site conditions within low sagebrush vegetation communities and similar but greater departure in mountain big sagebrush vegetation communities. Departure from reference site conditions in mountain big sagebrush communities is due to altered fire regimes resulting in increased shrub dominance, loss of deep-rooted native perennial bunchgrasses, and the increasing density of juniper. The limited departure of indicators contributing to biotic integrity leads to a conclusion that the composition of native plants is currently adequate to provide for proper nutrient cycling, hydrologic cycling, and energy flow.

A static trend in vegetation condition is apparent, based on data from both trend sites in the allotment. This indicates that the ORMP objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has not been met in the Boone Peak allotment. Recent grazing use, as reported in actual use information, has included annual grazing through most of June and early July, the later portion of the active growing season. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhardt & Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequent as 2 of every 3 years or more often.

To summarize, the Boone Peak allotment is meeting Standard 4, although with increasing juniper encroachment into vegetation communities that should not include more than a few scattered juniper trees in any of the reference site conditions. Although current livestock grazing management practices have not contributed to the failure to meet Standard 4, they have contributed to a static trend, with the ORMP vegetation management objective to improve unsatisfactory vegetation health/condition not met in the Boone Peak allotment.

3.3.2.1.2 Soils

Watershed indicators show some departure from expected conditions for the ecological sites, although none were excessive enough to determine that Standard 1 would not be met in the Boone Peak allotment. While water flow patterns and pedestals are elevated in some locations, primarily toward the southern part of the allotment, there is little indication of accelerated sediment movement, and the majority of the erosional features present are related to past events.

Departure from reference conditions due to altered fire regimes, increased shrub dominance, loss of deep-rooted native perennial grasses, and increasing juniper density were identified as sources of concern regarding the biotic component. As a result, the allotment is deemed at-risk for potential declines in soil and hydrologic function due to a departure of the plant community and invasive species. Despite the reduction in biotic function, however, soil and hydrologic indicators show that watershed function still maintains proper nutrient and hydrologic cycling and energy flow.

Trends in ground cover using indicators of bare ground, persistent cover, and canopy cover have also indicated a general static or improving trend in the Boone Peak allotment. Bare ground has decreased or is static and at low levels, which supports the decision that the ORMP objective to improve unsatisfactory and maintain satisfactory watershed health/condition has been met. Overall, current livestock management remains compatible with attainment of Standard 1 and ORMP objectives for the Boone Peak allotment.

3.3.2.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶¹

Standards 2 and 3 are not being met in the Boone Peak allotment, but the allotment is making significant progress toward meeting them. Three named streams traverse BLM lands within the allotment (Bridge, North Boulder, and Pickett Creek). Approximately 3.2 miles have been assessed; 0.6 miles (19 percent) were most recently rated FAR, and 2.6 miles (81 percent) were most recently in PFC (Table RIPN-15). Issues identified for North Boulder Creek where the stream was most recently FAR include areas with inadequate soil moisture to support hydric species that stabilize stream banks, the presence of noxious weeds, upland species encroaching, and sheared and eroded stream banks.

Fifteen springs have been assessed; 11 were in PFC, three were FAR, and one was NF. The springs that were below the minimal standard for functionality had issues identified that include heavy livestock use of both herbaceous and woody species, hoof alterations of wetland soils, and noxious weed presence.

Table RIPN-15: Boone Peak allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Bridge Creek	1.10 (FAR- 2001) (PFC- 2008)	2001: no data sheet 2008: localized areas of erosion/deposition	1.1
North Boulder Creek	0.6 (FAR- 2001) 1.0 (PFC- 2008)	2001: no data sheet 2008: 0.4 mile is on private/ rock armored	1.0
Pickett Creek	1.5 (FAR-2001) (PFC-2008)	2001: top 2/3 of reach is accessible to livestock and is overwide with bare banks and erosion/deposition 2008: lack of herbaceous understory	1.5

Springs Assessed, Condition, & Issues Identified			
Spring Name	Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring 589 1A	2003	PFC	
Unnamed Spring 589 1B	2003	FAR	heavily grazed/ hoof shearing/ presence of weeds
Unnamed Spring 589 1C	2003	PFC	
Unnamed Spring 589 1D	2003	PFC	
Unnamed Spring 589 1E	2003	FAR	heavily grazed/ hoof shearing/ presence of weeds
Unnamed Spring 589 1G	2003	PFC	
Unnamed Spring 589 1H	2003	PFC	

¹⁶¹ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Boone Peak (0589), Red Mountain (0588), Bridge Creek (0590), Quicksilver FFR (0483), and Stahle FFR (0641) Allotments* document on the Idaho BLM Group 3 website or available upon request from the Owyhee Field Office

Springs Assessed, Condition, & Issues Identified			
Spring Name	Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring 589 1I	2003	PFC	
Unnamed Spring 589 1J	2003	PFC	
Unnamed Spring 589 1K	2003	PFC	
Unnamed Spring 589 2A	2003	PFC	
Unnamed Spring 589 2B	2003	PFC	
Unnamed Spring 589 2C	2003	NF	developed with troughs and berms/ heavily browed and pugged/high % of bare ground/ willow in poor condition/ impacts from road
Boone Peak Spring	2003	FAR	moderate pugging/weeds present/
Unnamed Spring	2008	PFC	

Standard 7 is not being met in the Boone Peak allotment. For IDEQ water quality information associated with the Boone Peak allotment, see table RIPN-3.

3.3.2.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.2.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Boone Peak allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013b).

The Boone Peak allotment consists of a single pasture containing a mixture of conifer woodlands and shrub steppe habitats. Juniper is encroaching into parts of the shrub steppe habitat. The higher-elevation areas around Quicksilver Mountain are free of juniper encroachment and are used by sage-grouse in all seasons, but especially in the summer (IDFG, unpublished data).

Table WDLF-2: Focal habitats that are present on the Boone Peak allotment and whether current conditions within the pasture are limiting the quality of those habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Conifer woodland Shrub steppe	Not Limiting	<ul style="list-style-type: none"> - Adequate composition of deep-rooted perennial grasses. - Structural functional groups are present and similar to reference state. - Juniper is beginning to encroach on shrub steppe habitat.

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Riparian habitats North Boulder Creek Bridge Creek Pickett Creek Various springs	Limiting but improving	- Inadequate soil moisture to support hydric vegetation that stabilizes stream banks. - Sheared and eroded stream banks. - Complex woody riparian habitats are present - Redband trout are present. - Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Not Limiting	- Adequate canopy cover and height of deep-rooted perennial grasses and forbs. - Adequate canopy cover and height of sagebrush - Juniper encroachment into sage-grouse habitat

Although Standards 2 and 3 aren't met on the Boone Peak allotment, significant progress is being made and, based on photographs of the riparian habitats, the allotment is providing adequate habitat for many riparian-dependent species. Riparian woody species in Bridge, North Boulder, and Pickett Creeks display diverse species and age-classes with multiple canopies that are providing structurally complex breeding, nesting, and foraging habitat for dependent species. Thus, the Boone Peak allotment is meeting Standard 8.

3.3.2.1.6 ACEC

Cinnabar Mountain RNA/ACEC discussion is located in Affected Environment 3.1.7 and Environmental Consequences 3.2.7 Sections in this EA.

3.3.2.1.7 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.2.1.8 Cultural Resources

There are four prehistoric sites and two historic sites on record within the Boone Peak allotment. Site 100E1391 is the remains of a structure with an associated trash scatter and 100E6458 is a standing log structure. Neither site is eligible for the NRHP. Sites 100E286, 100E959, 100E992 and 100E7692 are prehistoric lithic and stone tool scatters. Three of these sites are of undetermined NRHP eligibility and one is potentially eligible. Because none of these sites are within 100 meters of a livestock congregation area, cultural resources staff conducted no site monitoring visits. There are no potential areas of livestock congregation identified on BLM administered land and staff completed no new cultural inventories.

3.3.2.2 Boone Peak Allotment Environmental Consequences

3.3.2.2.1 Alternative 1

3.3.2.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a small reduction of livestock numbers and the resulting reduction of active AUMs authorized from 2,092 in the existing permit to 2,052. While Standard 4 was met in the allotment, the ORMP management objective to improve health and condition of vegetation was not met. Impacts to the health and vigor of native perennial bunchgrasses, which are preferred forage plant species, would occur with scheduled growing season use in the one pasture of the

Boone Peak allotment beginning June 1 annually and including more than one month of active growing-season use (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 but would continue to limit improvement in upland condition and trend, especially when that level of grazing use occurs during the active growing season. Continued utilization levels that have occurred in recent years, primarily during the active growing season, would limit improvement in upland condition and trend.

While Standard 4 would continue to be met with the continuation of livestock management practices that have occurred in recent years, the ORMP management objective to improve health and condition of vegetation would not be met.

3.3.2.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of meeting Standard 1 and ORMP objectives (Section 3.1.2) and maintain ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.2.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.2.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.2.1), the Boone Peak allotment would be available to grazing during the summer and fall annually, without rest or riparian area constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.8 mile of perennial streams, 13.3 mile of intermittent/ ephemeral stream, and six springs would be affected by the impacts associated with the summer and fall seasons of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the summer and fall; therefore, the impacts of spring and summer grazing would likely continue to be most prevalent under Alternative 1.

Under current management, the Boone Peak allotment is not meeting the Standards associated with the riparian-wetland resources but is making significant progress toward meeting. Since the allotment would be used during the same seasons, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.2.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.2.2.1.5 Wildlife and Special Status Animals

Under this alternative, the grazing practices that resulted in the current conditions on the Boone Peak allotment would be expected to continue and the allotment would still meet Standard 8. Upland, riparian, and sage-grouse habitats would continue to provide cover and forage for wildlife species to survive and reproduce. Juniper encroachment would eventually begin to out-compete shrub steppe plant species resulting in decreased shrub steppe habitat quality or abundance.

3.3.2.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.2.2.1.7 Cultural Resources

No recorded cultural sites are within a 100-meter radius of a livestock congregation area, therefore, no known historic properties would be affected by this alternative.

3.3.2.2.2 Alternatives 2-4

Under Alternatives 2, 3 and 4, the Boone Peak allotment would be part of the newly configured Pickett Creek allotment (see Section 2.4.15). The environmental consequences affecting all resources within the Pickett Creek allotment are analyzed under the Red Mountain allotment in Sections 3.3.15.2.2 – 3.3.15.2.4.

3.3.2.2.3 Alternative 5

3.3.2.2.3.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. While Standard 4 would continue to be met, progress would be made toward meeting the ORMP objective to improve unsatisfactory vegetation health and condition.

3.3.2.2.3.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). As a whole, Alternative 5 would make the most rapid progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the other alternatives.

3.3.2.2.3.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.2.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.2.2.3.5 Wildlife and Special Status Animals

Under this alternative, no grazing would be authorized on public lands within the Boone Peak allotment for a term of 10 years. The allotment would continue to meet Standard 8 and provide habitat for riparian and shrub steppe upland habitat-dependent wildlife species including sage-grouse, Columbia spotted frog, redband trout, and migratory birds.

3.3.2.2.3.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.2.2.3.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.3 Box T Allotment

3.3.3.1 Box T Allotment Affected Environment

3.3.3.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-11 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Box T allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, are provided in Appendix E.

Table VEG-11: Ecological sites mapped for the Box T allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	1,139
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	3
	¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	205
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,488
	UNKNOWN/NO DATA		trace
Pasture 2	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	2
	LOAMY BOTTOM 12-16 ARTRT/LECI4	basin big sagebrush; basin wildrye	trace
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	2,275
	UNKNOWN/NO DATA		12
Pasture 3	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	3
	LOAMY BOTTOM 12-16 ARTRT/LECI4	basin big sagebrush; basin wildrye	trace
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,200
	UNKNOWN/NO DATA		75
Pasture 4	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	472
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	trace
	¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	107
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	440

	Ecological Site	Dominant Species Expected	BLM acres
	Box T total acres		7,421

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-11 above, the vegetation inventory for the Box T allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-12 is a summary of ecological condition within the Box T allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-12: Ecological condition for public lands in Box T allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Box T Allotment (0534)	40%	40%	20%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Box T allotment.

Additionally, current vegetation in the Box T allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-13.

Table VEG-13: Current vegetation in the Box T allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	3	0%
ASPEN	12	0%
BIG SAGE	967	13%
BIG SAGE MIX	4	0%
BITTERBRUSH	10	0%
BUNCHGRASS	865	11%

Vegetation Cover Type	Acres	Percent of Allotment
CONIFER	4	0%
EXOTIC ANNUAL	921	12%
GREASEWOOD	0	0%
JUNIPER	1,066	14%
LOW SAGE	1,612	21%
MOUNTAIN BIG SAGE	1,535	20%
MOUNTAIN SHRUB	424	6%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	130	2%
UNKNOWN/NO DATA	1	0%
Total:	7554	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-11 and VEGE-12. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a portion of the landscape in the Box T allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain shrubs, mountain big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident when comparing the two tables. Past fires and other disturbances are indicated by the presence of exotic annuals, while the PNNL data identifying limited acreage dominated by bunchgrass communities lacking a significant shrub component is within the variability of reference site conditions with natural disturbances.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in the Box T allotment. Review of the 2006 Evaluation/Determination for Standard 4 within the Box T allotment and additional data and information compiled since its completion, including 2012 sage-grouse habitat assessment data, does not lead to a change in the conclusion that the Standard is not met and that current as well as historic livestock management practices are significant causal factors. The increase in juniper dominance is also a contributing factor to not meeting the Standard. Current livestock management practices include grazing of upland vegetation communities during the active growing season (May-June) in pastures 1 and 3 annually. Frequent growing-season grazing use in pastures 1 and 3, to benefit riparian resources, has led to the continuing decline of bunchgrass vigor and a decline in the frequency of desirable deep-rooted perennial bunchgrass species. Recorded utilization levels have not exceeded the maximum allowable level of 50 percent during the past decade, a limit established in the Owyhee Resource Management Plan.

In addition, juniper occurrence was noted as scattered to common at a number of sites and contributes to not meeting Standard 4. Juniper invasion is a causal factor in failure to meet the Standard in pastures 1 and 4. Juniper encroachment is a product of altered fire regimes from natural levels of disturbance.

Because the allotment is failing to meet Standard 4, the ORMP management objective to improve unsatisfactory vegetation health/condition on all areas is not met. State-and-transition models identify that appropriate livestock management practices can be implemented to allow progress toward meeting the ORMP vegetation management objective and attaining progress toward reference-site vegetation communities with a co-dominance of deep-rooted perennial bunchgrasses and shrubs. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing-season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhardt & Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequent as 2 of every 3 years or more often.

To summarize, the Box T allotment is not meeting Standard 4 as a result of current livestock management practices that schedule grazing use during the active growing season for upland vegetation communities in pastures 1 and 3 annually. In addition, historic grazing practices contributed to a decline in the dominance by deep-rooted native bunchgrass species and the failure to meet the Standard. Juniper encroachment is also a contributing factor to not meeting the standard. Because current livestock management practices have contributed to a static to downward trend in pasture 1, the ORMP vegetation management objective to improve unsatisfactory vegetation health/condition is not met in the Box T allotment.

3.3.3.1.2 Soils

Current livestock grazing management practices are significant causal factors for not meeting upland watershed Standard 1 in pastures 1 and 3 of the Box T allotment; pasture 2 is not meeting due to historic livestock grazing and past fire impacts, while pasture 4 (formerly 1A) is meeting but is considered to be at risk for juniper invasion. Junipers currently do not appear to be driving negative soil and hydrologic functions at this time, although the potential for continued invasion is apparent.

For pastures 1 and 3, erosional patterns show departures from reference conditions that are attributed to changes in the plant community. While pasture 1 displays mechanical damage and a mixture of ongoing and historic soil loss in various stages of stabilization, it is the recent increase in bare ground and coinciding decline in ground cover trend that failed the pasture. Conditions in pasture 3 are further deteriorated by widespread loss of the soils surface horizon, active erosional features, extensive bare ground, and increased amounts of trails that have resulted in localized gullyng.

The reduction in soil and hydrologic function is associated with altered plant community composition and distribution due to decreased relative abundance of large, deep-rooted native perennial bunchgrasses. As a result, historic and active accelerated erosional processes have increased pedestaling of plants that, along with accelerated physical damage from hoof action and mechanical damage to soils by livestock, have also affected the biological soil crust component, especially in the interspatial areas.

Pasture 2 continues to have a significant reduction in biological soil crusts after a fire in 1994. Historic erosion relics, high potential for soil movement, and the long- and short-term increases in bare ground in pasture 2 reflect little improvement in watershed health despite an increase in biotic components.

Degraded soil conditions and a declining trend do not project improvement and indicate that ecological function is compromised due to the decreased ability for proper nutrient cycling, hydrologic cycling, and energy flow. This leads to the conclusion that current and historic livestock management is the primary causal factor in not meeting Standard 1 and the ORMP soil management objective of improving unsatisfactory watershed health/condition for the Box T allotment.

3.3.3.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶²

Standards 2 and 3 are not being met in pastures 1, 3, and 4 (1A) of the Box T allotment. Segments of Alder Creek and the North Fork of Castle Creeks that traverse pasture 1 were rated FAR because there was a high percent of the herbaceous vegetation foraged, and erosion and deposition were occurring, contributing excessive sediment into the stream. Within pasture 3, a reach of Meadow Creek was most recently rated FAR based on heavy use of riparian vegetation and excessive sediment. Subsequently, a MIM site was established on the same reach of Meadow Creek. The bank alteration was 22 percent, exceeding the ORMP objective. However, the stability rating was high and the wetland rating was very good. Segments of the North Fork of Castle Creek and its tributary that traverse pasture 4 were assessed FAR because there was inadequate hydric vegetation present to protect streambanks, and there were headcuts present on the upper reach of the NF Castle Creek, which increases vertical instability.

Six springs occur on BLM lands within pasture 1 and have been assessed; five were most recently rated FAR, and one was rated NF. Five springs that occur within pasture 4 (1A) have been assessed; four were most recently assessed in PFC, and one was rated FAR.

The majority of the springs were losing extent of the riparian-wetland area and there was generally inadequate vegetation present to aid in stabilizing riparian soils and maintaining hydric vegetation. There were also typically altered flow patterns created by mechanical damage from livestock trampling as well as the presence of noxious weeds.

Table RIPN-16: Box T allotment riparian condition

Stream Name	Allotment & Pasture Stream Miles & Condition			Assessment Issues/ Impacts Identified	Total Miles
	Box T- 01	Box T- 03	Box T- 04 (1A)		
Alder Creek	0.3 (FAR-2000)			vertical and lateral instability, high use of stream bank with erosion/deposition occurring	0.3
NF Castle Creek lower	0.6 (FAR-2004) (FAR-2008) (photos 2013)		0.2 (FAR-2004) (FAR-2008)	incised channel/ high use of herbaceous veg./ upland contribution and excessive sediment 2013- vegetation heavily impacted	0.8

¹⁶² For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Hart Creek (0532), Box T (0534), and Alder Creek FFR (0639) Allotments* document on the BLM Idaho Group 3 website or available upon request from the Owyhee Field Office

Allotment & Pasture Stream Miles & Condition					
Stream Name	Box T- 01	Box T- 03	Box T- 04 (1A)	Assessment Issues/ Impacts Identified	Total Miles
NF Castle Creek upper			1.5 (FAR-2004) (FAR-2008)	2 headcuts present/ lack of riparian veg.	1.5
NF Castle Trib			0.3 (FAR-2003)	lack of plant age-class/ lack of hydric plant cover to protect banks	0.3
Meadow Creek		1.5 (FAR-2001) (NF- 2004) FAR-2007)		excessive sediment/ incised channel & cutbanks/ high use of veg.	1.5
Charity Spring Trib	0.3 (PFC-2003)				0.3

MIM Site Metrics										
Stream Name/ Year/ Pasture	Median SH (inches)	Bank Alteration (%)	Woody Use (%)	Bank Stability (%)	Bank Cover (%)	% Mature	% Seedlings & young	Ecological Status	Greenline Stability Rating	Site Wetland Rating
Meadow Creek/ 2010/ 3	9.0	22	19.3	98	99	8	92	PNC (91)	High (8.5)	Very good

Springs Assessed, Condition, & Issues Identified			
Spring Name	Pasture/Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Charity Spring (outside exclosure)	1/2003 & 2002 & 2013	FAR & NF & photos	2003- shrinking area/ altered flow patterns/ inadequate riparian veg., vigor & composition 2008: nonfunctioning trough below a heavily impacted wetland area with no riparian vegetation present 2013- minimal vegetation/ excessive trampling
Linehan Spring	1/2003 & 2008	FAR & FAR	shrinking area/ inadequate stabilizing root mass/ inadequate cover/ presence of noxious weeds
Unnamed Spring "5341B"	1/2003 & 2010 2012 & 2013- photos and notes	NF & FAR	2003 & 2010- area shrinking/ inadequate rip. veg. & stabilizing root mass/ lack of species composition and plant vigor/ presence of noxious weeds 2013- appears to be on a downward trend
Unnamed Spring "5341C"	1/2003	NF	area shrinking/ inadequate stabilizing rip. veg & root mass/ lack of species composition and plant vigor/ presence of noxious weeds
Unnamed Spring "5341Z"	1/2003	FAR	lack of flood plain/ inadequate stabilizing rip. veg & root mass/ lack of species composition and plant vigor/ drying soils/ presence of noxious weeds
Roadside Spring	1/2008 & 2010	Pics & FAR	2010: lack of flood plain/ area shrinking/ lack of plant composition/ lack of hydric soils

Springs Assessed, Condition, & Issues Identified			
Spring Name	Pasture/Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring "5341A E"	4/2003 & 2010	FAR & PFC	2003: altered flow patterns/ lack of plant diversity and vigor
Unnamed Spring (5341A "G")	4/2003	FAR	altered flow patterns/ inadequate veg. cover, composition and vigor
Unnamed Spring (SpringSeries_5341A "C")	4/2003 & 2010	FAR & PFC	2003: altered flow patterns/ lack of age plant age class, composition & vigor
Unnamed Spring (SpringSeries_5341A "D")	4/2003 & 2010	FAR & PFC	2003: area shrinking/ altered flow patterns/ lack of plant age-class, composition and vigor
Broken Trough Spring	4/2008 & 2010	PFC & PFC	

Table RIPN-17: MIM Capability Groups

Greenline Ecological Status Rating		Vegetation-Erosion Resistance Status Rating (Greenline Stability rating)		Site Wetland Status Rating	
Summary Value	Condition Rating	Summary Value	Condition Rating	Summary Value	Condition Rating
0-15	Very Early	0-2	Very Low	0-15	Very Poor
16-40	Early	3-4	Low	16-40	Poor
41-60	Mid	5-6	Moderate	41-60	Fair
61-85	Late	7-8	High	61-85	Good
85+	PNC	9-10	Very High	85+	Very Good

Standard 7 is not being met in the Box T allotment. For IDEQ water quality information associated with the Box T allotment, see table RIPN-3.

3.3.3.1.4 Special Status Plants

There are two special status plants that occur within the Box T allotment: mudflat milkvetch and one-flowered goldenweed. Both occurrences of these special status plants are meeting Standard 8. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006, and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation, and determination documents. The BLM used information in those documents to address the Allotment-specific Affected Environment.

Mudflat milkvetch: Observations on grazing and trampling effects on mudflat milkvetch in this allotment are lacking. It is unknown if the population is extinct or if livestock are presently having any impacts on the plants or habitat. Livestock impacts to this genus have been documented as a result of trampling (Mancuso & Moseley, 1993); populations have been disturbed to some degree by livestock grazing and, to a lesser extent, by other activities such as roads and wood cutting operations. Plants can apparently persist in areas subjected to some trampling, at least in the short term. This occurrence has a potential future threat of livestock trampling in the case of increased stocking rates or annual livestock use during the active growing season.

One-flowered goldenweed: Observations on grazing and trampling effects on one-flowered goldenweed in this allotment are lacking. It is unknown if the population is extinct or if livestock are presently having any impacts on the plants or habitat. Cattle are typically drawn to this habitat type since it is a water source. Livestock impacts to this genus have not been documented as a result of trampling when the soil was wet, although plants can apparently persist in areas subjected to some trampling, at least in the short term. This occurrence has a potential future threat of livestock trampling in the case of increased stocking rates or annual livestock use during the active growing season.

Standards 1, 2, 3, 4, 7, and 8 of the applicable Standards for Rangeland Health are not being met in the Box T allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, 7, and 8. There is the possibility of a future threat of livestock trampling to the above-listed SSPS populations in the case of increased stocking rates or annual livestock use during the active growing season.

3.3.3.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Box T allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013e).

Box T allotment is divided into four pastures (Maps RNGE-1a and RNGE-1b). The major habitat type within the allotment is sagebrush steppe with some scattered juniper encroachment (Maps GEN-3a and GEN-3b). Sage-grouse use habitats within the allotment during breeding, summer, and winter seasons (Map WDLF-3). In addition to the two leks that occur on the allotment, the majority of the allotment intersects sage-grouse habitat correlated with high breeding densities (i.e., 75 percent breeding bird density area; (Doherty, Tack, Evans, & Naugle, 2010); Map WDLF-1). The Box T allotment is not meeting Standard 8 and current livestock practices are significant factors. Juniper encroachment and conversion of shrub steppe to woodlands are the main concerns affecting upland habitat quality in the allotment.

Table WDLF-3: Focal habitats that are present on the Box T allotment and whether current conditions within the pasture are limiting the quality of those habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Reduced amount of deep-rooted perennial grasses - Juniper encroachment is occurring
Riparian habitats Alder Creek Meadow Creek North Fork Castle Creek Various Springs	Limiting	- Insufficient vegetation to stabilize soils - Over utilization of riparian vegetation - Erosion and excessive sedimentation - Presence of noxious weeds - Redband trout are present - Spotted frogs are present
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	- Adequate canopy cover of deep-rooted perennial grasses and forbs - Deep-rooted perennial grasses are shorter than necessary - Juniper encroachment into sage-grouse habitat is beginning to limit the habitat

3.3.3.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.3.1.7 Cultural Resources

The Box T allotment contains 13 previously recorded sites, all of which are prehistoric lithic scatters and some incorporate stone tools. BLM cultural resources staff monitored seven sites, 100E946, 100E949, 100E950, 100E961, 100E971, 100E2769 and 100E5089 because of their proximity to possible livestock congregation areas. Except for sites 100E971 and 100E2769, which are experiencing ground disturbing effects of up to 15 centimeters deep over less than 20 percent of the sites' areas, the other sites are undergoing either light grazing-related impacts (less than 5 centimeter below surface level) or none at all. The two affected sites, both are of undetermined eligibility for the NRHP, are not adversely impacted by livestock activities and the characteristics contributing to their potential eligibility for the NRHP are not impaired.

BLM staff surveyed all 21 identified potential livestock congregation areas and recorded three new prehistoric lithic scatters (temporary site numbers 13-O-03S1, 13-O-03S2 and 13-O-03S3). One site also has a historic component. All of the sites are experiencing minor livestock trampling of less than 5 centimeters deep that is not affecting their NRHP-eligibility potential.

3.3.3.2 Box T Allotment Environmental Consequences

3.3.3.2.1 Alternative 1

3.3.3.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a small reduction of livestock numbers and the resulting reduction of active AUMs authorized. Standard 4 is not met due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Impacts to health and vigor of native perennial bunchgrasses, which are preferred forage plant species, would occur with annual scheduled growing season use in pasture 1 of the allotment and frequent scheduled growing-season use of pasture 2 (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season resulting in utilization levels in the light to moderate level would continue to limit improvement in upland condition and trend.

Under Alternative 1, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.3.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide little to no improvement to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts exist from current and historic livestock grazing exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.3.1.2, in the Impacts Common to All Grazing

Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.3.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.3.1), pasture 1 of the Box T allotment would be available to grazing during the summer annually, and pastures 3 and 4 would be open during the summer and fall annually, without rest or riparian area constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.4 miles of perennial streams, 12.1 miles of intermittent/ ephemeral stream, and 14 springs would be affected by the impacts associated with the summer and fall seasons of grazing. Pastures 1, 3, and 4 contain the riparian areas. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall; therefore, the impacts of spring and summer grazing would likely continue to be most prevalent under Alternative 1.

Under current management, the Box T allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons under this Alternative, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.3.2.1.4 Special Status Plants

There are two SSPS in this allotment, mudflat milkvetch and one-flowered goldenweed. Standards 1, 2, 3, 4, 7, and 8 of the applicable Standards for Rangeland Health are not being met in the Box T allotment. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. It is for the above reasons that Alternative 1 will not maintain or improve the habitat for mudflat milkvetch or one-flowered goldenweed. The resulting adverse effects on the special status plant sites are habitat degradation and decreased population viability with little or no improvement to the habitat, as described above in the Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.) and Common to All Grazing Alternatives (Section 3.2.4.1). The current management regime would allow for grazing in all pastures every year during summer and fall annually, with minimal rest or deferment. Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species.

3.3.3.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1 in upland habitats, sagebrush would continue to provide adequate woody cover, structure, and forage for many shrub-obligate and -dependent species; however, upland habitat quality overall would continue to be limited by the lack of the deep-rooted, tall-statured perennial bunchgrass component of the herbaceous understory. Although shrub cover and understory conditions in combination would minimally provide for the needs of most dependent special status species, the low occurrence of desirable bunchgrasses would continue to limit habitat quality for many ground dwelling, nesting, and foraging species.

Riparian habitat

Current livestock grazing practices in riparian habitats within the Box T allotment have reduced the extent and abundance of riparian vegetation. This limits the suitability of these habitats for sage-grouse, spotted frog, redband trout, and other dependent wildlife species. Under Alternative 1, the grazing practices that have resulted in the current conditions in riparian habitats would be allowed to continue. Grazing riparian habitats every year for extended periods during the hot season typically results in overutilization of

herbaceous and woody vegetation, which reduces the vigor and reproductive capability of existing plants and inhibits the establishment of seedlings. Under Alternative 1, riparian areas would not meet the habitat requirements for sage-grouse, spotted frog, redband trout, and other riparian dependent wildlife species. Under Alternative 1, redband trout habitat in Alder and North Fork Castle Creeks would continue to be at risk of increased temperatures from reduced shading and sedimentation. Livestock would also graze and use Alder Creek and North Fork Castle Creek for water during the redband trout spawning season, which could result in trampling of redds (Gregory & Gamett, 2009). Although conditions are not expected to either improve or worsen in upland habitats, significant progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals) would not occur due to the continuation of annual growing/hot-season grazing (in most pastures) that degrades habitat in riparian areas.

Sage-grouse habitat

Under Alternative 1, the necessary components for productive sage-grouse habitat would continue to be present in the uplands, but juniper encroachment would continue to occur and in the future would reduce sage-grouse habitat quality in the allotment. Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the cover and forage available from sagebrush and perennial grasses and forbs. This would reduce the amount and quality of sage-grouse habitat in the allotment.

3.3.3.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.3.2.1.7 Cultural Resources

Cultural sites 10OE971 and 10OE2769 are experiencing moderate livestock trampling (up to 15 centimeters below adjacent surface levels), however, the disturbance is not adversely affecting the sites' characteristics for potential NRHP eligibility. It is recommended that the sites be monitored occasionally to track any negative changes in their condition. No known historic properties would be affected by this alternative.

3.3.3.2.2 *Alternative 2*

3.3.3.2.2.1 Vegetation

Under Alternative 2, the permittee applied to maintain active authorized use at 1,774 AUMs and to implement a grazing schedule with flexibility to annually graze cattle within pastures 1, 2, and 3 during the active growing season for cool-season bunchgrass species. Standard 4 is not met due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Impacts to health and vigor of native perennial bunchgrasses, which are preferred forage plant species, would occur with annual scheduled growing season use in pastures 1, 2, and 3 of the allotment (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (see Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4, except when those utilization levels occur with use during the active growing season. Frequent grazing use during the active growing season resulting in utilization levels in the light to moderate level would continue to limit improvement in upland condition and trend.

Under Alternative 2, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.3.2.2.2 Soils

Alternative 2 for the Box T allotment would provide yearly deferment from spring grazing for all pastures that would reduce physical impacts during the wettest period. Annual critical growing season use is deferred for pasture 4 and would be beneficial for soils. However, the allotment would see an increase in livestock numbers and AUMs, which would not provide opportunity to increase soil stability due to the inability of native plant communities to remain healthy, vigorous, and productive during active growth. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2, compared to Alternative 1 (see Section 3.2.2.3).

3.3.3.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.3.2), the permittee proposes to graze pastures 1 and 3 of the Box T allotment during the summer annually, and pasture 4 would be open to grazing during the summer and fall every year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). The application requests the same seasons of use as the current situation, but a 15 percent increase in the active AUMs over the 10-year permit. Therefore, the impacts would be the same or slightly more than those described above under Alternative 1 (Section 3.3.3.2.1.3), and the Standards would continue to not be met.

3.3.3.2.2.4 Special Status Plants

Alternative 2 is similar to Alternative 1, with the increase of 261 AUMs more than under Alternative 1; the difference in AUMs is the result of greater livestock number and the same period of grazing use. This alternative would not provide opportunity to increase habitat quality for SSPS. As a whole, the allotment would not make progress toward improvement compared to Alternative 1, risking further declining conditions and possible impacts to SSPS.

3.3.3.2.2.5 Wildlife and Special Status Animals

Grazing under Alternative 2 is essentially identical to Alternative 1 in its impacts for the Box T allotment. In upland habitats, the necessary components for productive habitat for sage-grouse and other dependent species would continue to exist until juniper encroachment altered the community composition to an unsuitable condition and ecological state (i.e., juniper woodland). Grazing would continue to occur in riparian habitats during the hot season, and continued heavy use of riparian habitat would be expected. Riparian habitat for sage-grouse, spotted frog, and redband trout would continue to decline in quality. Under Alternative 2, the Box T allotment would neither meet nor make significant progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals).

3.3.3.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Additional AUMs and cattle and new pasture use dates could lead to additional labor and feed costs. However, the additional cattle could lead to more revenue from the sale of animals.

3.3.3.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.3.2.3 Alternative 3

3.3.3.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would not exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. Additionally, a

reduction in the number of cattle, resulting in an allotment-wide stocking rate of approximately 10 acres per AUM (compared to the current permit with 4.2 acres per AUM), would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season in 1 in 3 years would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be made toward meeting Standard 4, as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.3.2.3.2 Soils

Alternative 3 would provide yearly deferment from spring grazing and would result in reduced physical impacts to soils during the wettest period of the year. Critical growing season use would be deferred a minimum of 1 out of 3 years for pasture 1, in 2 out of 3 years for pastures 3 and 4, and in all years in pasture 2. This would increase the ability of native plant communities to remain healthy, vigorous, and productive during active growth. In addition, a decrease in livestock numbers would result in fewer AUMs and reduced stocking rates that would benefit soils by limiting physical impacts from hoof action and utilization of plants. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.3.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.1 and 2.4.3.3), pastures 1 and 3 of the Box T allotment would be available to grazing during the summer for 2 years, and during the fall the third year of a 3-year grazing rotation. Pasture 4 would be open during the summer for the first year and during the fall in years 2 and 3 over the course of the 3 years (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.4 miles of perennial streams, 12.1 miles of intermittent/ ephemeral stream, and 14 springs would be affected by the impacts associated with the summer and fall seasons of grazing. Pastures 1, 3, and 4 contain the riparian areas. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall annually, and the riparian Standards are not being met.

The Box T allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Under Alternative 3, the allotment would be managed under a defined 3-year schedule that incorporates riparian area constraint period deferment 1 in 3 years within the pastures that contain the riparian areas (1, 3, and 4). Other mandatory terms and conditions of the permit under this alternative would include measures that would reduce impacts (stubble height, woody browse, and bank alteration) associated with the riparian area conditions. Monitoring would be required within pastures 1 and 3, where use would occur in 2 out of 3 years during the riparian constraint period, and would add assurances that the allotment would make progress toward meeting the standard. The changes in season of use would result in a 51 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would meet the riparian-wetland Standards and ORMP objectives under this alternative.

3.3.3.2.3.4 Special Status Plants

Grazing permits would be renewed with actions that provide yearly deferment from spring grazing, and this allotment would progress toward meeting or continuing to meet standards and ORMP objectives. Limiting the critical growing season use to 1 out of 3 years in pasture 1, to 2 out of 3 years in pastures 3 and 4, and continuously in pasture 2 would improve the ability of native plant communities to remain stable and healthy. With an additional decrease in AUMs, coupled with a reduction in stocking rates,

Alternative 3 is expected to be better for SSPS compared to Alternative 1 and 2; however, not as beneficial as Alternatives 4 or 5.

3.3.3.2.3.5 Wildlife and Special Status Animals

In comparison to Alternative 1, grazing under Alternative 3 would provide deferment of grazing during the upland growing season from 1 to 3 years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 3 would provide deferment of grazing during the hot season from 1 to 2 years in any consecutive 3-year period in pastures with riparian habitats. Upland and riparian utilization and trampling limits also would be implemented in select pastures and years to prevent overuse and degradation. These timing constraints in conjunction with a conservative stocking rate would result in an active AUM reduction of 51 percent (Appendix C).

Upland habitat

Deferment during the active growing season would allow perennial grasses to complete their growth, reproduction, and establishment cycle without disturbance from livestock at least 1 in 3 years. Upland plant vigor and reproductive capability would improve and deep-rooted perennial grasses would increase. Juniper would continue to encroach on shrub steppe habitats and would eventually begin outcompeting shrubs, grasses, and forbs.

Riparian habitat

Under Alternative 3, riparian habitats in the allotment would receive grazing deferment during the hot season 1 (pastures 1 and 3) or 2 (pasture 4) years in any consecutive 3-year period, which would result in less use during deferment years. Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian-dependent wildlife species. Improvements in riparian conditions also would occur during years with hot-season use because additional utilization, stubble height, and bank alteration limits would prevent overutilization and degradation of riparian habitats. Deferment of hot-season grazing in combination with intensity limitation terms and conditions in pastures 1 and 3 would allow riparian habitats to progress toward PFC over the term of the permit albeit more slowly than what would be expected in pasture 4, which would improve more rapidly due to more years of hot-season grazing deferment. Healthy, vigorous riparian plant communities are expected to stabilize streambanks and provide shading, invertebrate prey habitat and stream channel characteristics appropriate to stream morphology, resulting in suitable aquatic wildlife habitat.

Sage-grouse habitat

Under Alternative 3, upland shrub steppe communities would provide productive habitats for sage-grouse and other dependent species in the majority of the allotment. Herbaceous understory conditions would improve with less pressure from livestock grazing in the growing season, and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species, including sage-grouse. The level of improvements in perennial herbaceous understory vegetation would be commensurate with the number of years of grazing deferment during the growing season. Perennial bunchgrasses vigor, production, and recruitment would increase most in pasture 2 because growing-season use in uplands would not occur and plants would proceed through their entire growth and reproductive cycle without disturbance from livestock grazing. Nevertheless, juniper encroachment would continue to affect uplands especially pastures 1 and 4 and would eventually decrease the quality and abundance of upland sagebrush habitats. Portions of all pastures are relatively free of juniper and these areas would show the biggest response to the reduced grazing intensity and the periodic deferment. Reduced grazing intensity would leave additional perennial grass residual cover for spring nest concealment. Increased vigor from reduced grazing intensity and deferment would increase cover from

deep-rooted perennial grasses and would increase forbs which are important forage for sage-grouse. More abundant forage would allow hens to be in better body condition prior to nesting which may increase both nesting effort and nest success (Barnett and Crawford 1994). Additional forage would also be present for chicks which would improve survival of broods. Additional growth from deep-rooted perennial grasses would reduce the visibility of sage-grouse hens, nest, and broods to predators which would increase survival (Holloran et al. 2005). Under Alternative 3, Box T allotment would progress toward meeting Standard 8.

3.3.3.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer AUMs and cattle and new pasture rotations with 1 year of deferred grazing could lead to additional labor and feed costs. Fewer cattle could lead to lower revenues from the sale of animals.

3.3.3.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.3.2.4 Alternative 4

3.3.3.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment, resulting in a stocking rate of approximately 10 acres per AUM for all pastures, compared to the current permit with a stocking rate of 4.2 acres per AUM. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. Limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season in 2 in 3 years would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be made toward meeting Standard 4 and the ORMP objective to improve vegetation health and condition.

3.3.3.2.4.2 Soils

Alternative 4 would provide yearly deferment or rest from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from reduced critical growing season use and riparian grazing (except pasture 2 for riparian) for a minimum of 2 out of 3 years. This would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion, and lessen concentrated use on upland soils that surround riparian areas. Subsequently, livestock numbers and active AUMs would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.3.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.1 and 2.4.3.4), pastures 1, 3, and 4 of the Box T allotment would be available to grazing during the summer for one year, during the fall the second year, and rested the third year of a 3-year grazing rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.4 miles of perennial streams, 12.1 miles of intermittent/ephemeral stream, and 14 springs would be affected by the impacts associated with the summer and fall

seasons of grazing. Pastures 1, 3, and 4 contain the riparian areas. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the summer and fall annually, and the riparian Standards associated with the riparian-wetland resources are not being met.

The Box T allotment is not meeting the Standards associated with the riparian-wetland resources under current management. Under Alternative 4, the allotment would be managed under a defined 3-year schedule that incorporates riparian area constraint period deferment 2 in 3 years within the pastures that contain the riparian areas (1, 3, and 4). The changes in season of use would result in a 79 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would meet the riparian-wetland Standards and ORMP objectives under this alternative.

3.3.3.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The SSPS occurrence would be more protected under this Alternative, with only Alternative 5 providing a more rapid rate of recovery; significant progress would be made toward meeting or continued meeting of all standards and the ORMP objectives.

3.3.3.2.4.5 Wildlife and Special Status Animals

Grazing under Alternative 4 would provide rest and/or deferment of grazing during the upland growing season from 2 to 3 years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 4 would provide rest and deferment of grazing during the hot season to prevent overuse and degradation 2 years in any consecutive 3-year period in pastures with riparian habitats. These timing constraints in conjunction with a conservative stocking rate would result in an active AUM reduction of 79 percent (Appendix C).

Under Alternative 4, upland and riparian habitats would have less pressure than any of the other grazing alternatives. With the exception of areas affected by continued juniper encroachment, upland shrub steppe communities would provide productive habitats for sage-grouse and other dependent species in the majority of the allotment. Under Alternative 4, effects from grazing management in pastures 1, 3, and 4 would be similar to those described in Alternative 3, but upland and riparian habitat improvements would occur more rapidly because these pastures would periodically receive rest from grazing and AUMs would be lower when grazing would occur. Without grazing pressure from livestock for an entire year, herbaceous understory conditions in the uplands would improve and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species, including sage-grouse. In addition, riparian plants would grow to their potential, reproduce, and establish new plants within riparian habitats. This would result in larger, well-developed riparian areas, which would provide increased succulent forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Under Alternative 4, riparian habitats would make more rapid progress toward PFC than the other grazing alternatives.

Although pasture 2 would not receive rest, grazing in upland habitats would be deferred during the growing season, similar to Alternative 3. However, upland habitat improvements would occur in pasture 2 because the intensity of use would be lower due to a reduction in AUMs in comparison to Alternative 1. Under Alternative 4, significant progress toward meeting Standard 8 would occur.

3.3.3.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. Fewer AUMs and cattle, new pasture use dates, and resting each pasture 1 year in every 3-year cycle could lead to additional labor and feed costs. Fewer cattle could lead to lower revenues from the sale of animals.

3.3.3.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.3.2.5 Alternative 5

3.3.3.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing-season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 and the ORMP objective to improve vegetation health and condition.

3.3.3.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.3.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.3.2.5.4 Special Status Plants

No grazing would be authorized on public lands within the Box T allotment for a period of 10 years. This alternative would give the native plant community the opportunity to make progress toward a healthy, vigorous habitat that supports plant diversity and creates quality SSPS habitats.

3.3.3.2.5.5 Wildlife and Special Status Animals

Under Alternative 5 upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would continue to provide productive sage-grouse habitat, and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species, including sage-grouse. However, under Alternative 5, juniper encroachment would not be impeded in many upland habitats and would eventually decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, well-developed riparian areas that would provide improved habitat for riparian-dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Terrestrial and aquatic wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals), especially in riparian habitats.

3.3.3.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.3.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.4 Bridge Creek Allotment

3.3.4.1 Bridge Creek Allotment Affected Environment

3.3.4.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-14 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Bridge Creek allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-14: Ecological sites mapped for the Bridge Creek allotment

Ecological Site	Dominant Species Expected	BLM acres
DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	28
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	888
¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	868
¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	755
¹ MOUNTAIN RIDGE 14-18 ARAR8/FEID	low sagebrush; Idaho fescue	6
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	21
Bridge Creek total acres		2,567

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-14 above, the vegetation inventory for the Bridge Creek allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-15 is a summary of ecological condition within the Bridge Creek allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-15: Ecological condition for public lands in Bridge Creek allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Bridge Creek Allotment (0590)	35%	50%	15%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; a similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Bridge Creek allotment.

Additionally, current vegetation in the Bridge Creek allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-16.

Table VEG-16: Current vegetation in the Bridge Creek allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	2	0%
BIG SAGE	37	1%
BIG SAGE MIX	0	0%
BITTERBRUSH	6	0%
BUNCHGRASS	153	6%
CONIFER	1	0%
EXOTIC ANNUAL	27	1%
GREASEWOOD	0	0%
JUNIPER	963	37%
LOW SAGE	225	9%
MOUNTAIN BIG SAGE	606	24%
MOUNTAIN SHRUB	509	20%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	46	2%
UNKNOWN/NO DATA	0	0%
Total:	2,577	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-14 and VEGE-15. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Bridge Creek allotment. Current juniper dominance within some ecological sites can be compared to the limited presence of small inclusions within vegetation communities which, at potential, would support dominant mountain shrubs, mountain big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident when comparing the two tables. Past fires and other disturbances are indicated by the presence limited acreage dominated by exotic annuals, whereas bunchgrass communities lacking a significant shrub component are within the range of variability of reference site conditions under natural disturbance regimes.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in the one-pasture Bridge Creek allotment with moderate departure of biotic integrity from reference site conditions within mountain big sagebrush and mahogany savannah vegetation communities. Functional/structural groups of plants with greatly reduced deep-rooted bunchgrasses within the pasture and the common occurrence of juniper have led to the departure from reference site conditions. In addition, the vegetation communities present have a reduced occurrence of mountain big sagebrush, bitterbrush, and other mountain shrub species. As noted in the 2006 assessment, fire in the southwest portion of the allotment has set back the encroachment by juniper into approximately 100 acres of shrub-steppe vegetation communities. As a result of this fire, mountain big sagebrush dominance consistent with potential was enhanced, but the allotment continued to lack the potential herbaceous component, including bunchgrasses.

Juniper dominance in excess of potential at reference site conditions, which resulted from altered natural fire regimes, has caused the failure to meet Standard 4 in the Bridge Creek allotment. Historic livestock grazing contributed to the loss of deep-rooted perennial bunchgrasses, while recent grazing practices with light intensity of use following the active growing season have allowed an upward trend in condition of native perennial bunchgrass composition. Residual deep-rooted bunchgrasses and a seed source for establishment of additional plants can provide opportunity for recovery toward reference site conditions with co-dominance of vegetation communities by Idaho fescue and bluebunch wheatgrass upon natural or planned reduction in competition from juniper.

Upward trend data indicate that the ORMP objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has been met in the Bridge Creek allotment.

To summarize, although the Bridge Creek allotment is not meeting Standard 4, current livestock grazing management practices are not a contributing factor. In addition to historic livestock management practices that resulted in loss of deep-rooted native bunchgrasses, juniper encroachment into shrub steppe vegetation communities has contributed to the failure to meet the standard. Recent grazing management practices with light intensity of use following the active growing season have allowed an upward trend in condition of native perennial bunchgrass composition and have led to the allotment meeting the ORMP objective to improve unsatisfactory vegetation health/condition.

3.3.4.1.2 Soils

Juniper encroachment and past livestock grazing management practices are significant causal factors for not meeting watershed standards in the Bridge Creek allotment. While soils are currently stabilized in a degraded state, hydrologic function is altered and primarily connected to historic grazing practices that contributed to the loss of deep-rooted perennial bunchgrasses. Watershed function is dependent on biotic integrity and declines with a reduction in vegetation and where western juniper encroachment and dominance is not part of the site potential. Where not recently burned, the encroachment of juniper is negatively affecting soil stability due to bare soils and the often complete absence of understory and interspatial vegetation, especially in more mature stands.

In soils dominated by granitic parent material, the reduction in infiltration capacity from displacement of sagebrush and deep-rooted perennial bunchgrasses influences water-holding capacity; subsequent runoff results in sheet erosion and rilling. The long-term lack of species diversity and reduction of organic material and litter have compromised soil nutrient replenishment and the ability for proper nutrient cycling, hydrologic cycling, and energy flow. Little to no indication of current mechanical impact is present, as recent grazing with light intensity of use occurs after the active growing season. While this has allowed an upward trend in condition of native perennial bunchgrass composition, ground cover conditions reflect a slight downward trend over the long term, with greater declines over the more recent years.

The decreased ecological function and impaired soils indicate that soil and hydrologic function are compromised. Juniper encroachment and historic livestock grazing indicate that the Bridge Creek allotment is not meeting Standard 1 and the ORMP soil management objective of improving unsatisfactory watershed health/conditions.

3.3.4.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶³

Standard 2 is not being met in the single pasture of the Bridge Creek allotment. Two named streams traverse the pastures (Bridge and Ditch Creek). Approximately 3.4 miles have been assessed and 2.5 miles (74 percent) were most recently rated FAR, and 0.9 mile (26 percent) was most recently in PFC. Issues identified for the reaches that were FAR include areas with inadequate soil moisture to support hydric species that stabilize stream banks, a lack of age-class of woody species, an over-wide stream channel, and sheared and eroded stream banks.

Table RIPN-17: Bridge Creek allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Bridge Creek	1.6 (FAR- 2001) 0.7 (FAR- 2008)	2001-inadequate riparian veg/ excessive erosion/ cut banks & incised channel/ overwide channel 2008- channel braided, overwide, and incised/ exposed roots/ erosion/ lack of age-class of woody species/ inadequate riparian veg present	1.6

¹⁶³ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Boone Peak (0589), Red Mountain (0588), Bridge Creek (0590), Quicksilver FFR (0483), and Stahle FFR (0641) Allotments* document in the project record or available from the Owyhee Field Office

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
		to stabilize banks	
Ditch Creek	0.9 (FAR- 2008)	headcuts present/ lack of deep rooted riparian veg	0.9
Ditch Creek	0.9 (PFC- 2008)	in canyon/ large woody debris and willows present to protect banks and limit access by livestock	0.9

Bridge Creek MMIM Metrics: 2.4" stubble height and 39 percent bank alteration

Standard 7 is not being met in the Bridge Creek allotment. For IDEQ water quality information associated with the Bridge Creek allotment, see table RIPN-3.

3.3.4.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.4.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Bridge Creek allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013b).

Bridge Creek allotment has a single pasture with mostly sagebrush steppe. Juniper is encroaching on sagebrush steppe habitat across the allotment. Sage-grouse use habitats within the allotment during the breeding and summer seasons (IDFG, unpublished data). Bridge Creek allotment is not meeting Standard 8 and current livestock practices are causal factors.

Table WDLF-4: Focal habitats that are present on Bridge Creek allotment and whether current conditions within the pasture are limiting the quality of those habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Reduced abundance of deep-rooted perennial grasses - Juniper is encroaching on shrub steppe habitat
Riparian habitats Bridge Creek Ditch Creek	Limiting	- Inadequate soil moisture to support hydric vegetation that supports stream banks - Reduced woody species - Overwide stream channel - Eroding stream banks - Redband trout are not present - Spotted frogs are not present
Sage-grouse Preliminary Priority Habitat Breeding Summer	Limiting	- Adequate canopy cover and height of deep-rooted perennial grasses and forbs - Juniper encroachment into sage-grouse habitat - All riparian habitats are within areas dominated by juniper and are unusable by sage-grouse

3.3.4.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.4.1.7 Cultural Resources

There are seven previously recorded cultural sites in the Bridge Creek allotment. Six of the sites are prehistoric lithic scatters and one is a historic refuse scatter. None of the sites are within 100 meters of an identified potential livestock congregation area and none received a monitoring visit. Staff did not survey the three potential congregation areas identified in the allotment.

3.3.4.2 Bridge Creek Allotment Environmental Consequences

3.3.4.2.1 Alternative 1

3.3.4.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a small reduction of livestock numbers and the resulting reduction of active AUMs authorized. While Standard 4 was not met in the allotment due to altered fire regimes and juniper encroachment into sagebrush steppe vegetation communities, the ORMP management objective to improve health and condition of vegetation has been met, with upward trend reported. Limited impacts to health and vigor of native perennial bunchgrasses, which are preferred forage plant species, would occur with scheduled growing-season use in the one pasture of the Bridge Creek allotment beginning July 1 annually and including a small portion of the active growing season for upland vegetation (Appendix E). The light utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute to a failure to meet Standard 4 and would not limit improvement in upland condition and trend, especially when that level of grazing use occurs late during the active growing season.

While Standard 4 would continue to not be met due to altered fire regimes and juniper encroachment, continuation of livestock management practices that have occurred in recent years would result in progress toward meeting the ORMP management objective to improve unsatisfactory vegetation health and condition.

3.3.4.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions that fail to meet Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. The allotment is also affected by juniper encroachment, which has the tendency to alter soil infiltration and water-holding capacity over time. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels, as described above in Section 3.3.4.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.4.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.4.1), the Bridge Creek allotment would be available to grazing during the summer and fall annually, without rest or riparian area constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 1.3 miles of perennial and 5.1 miles of intermittent stream would be affected by the impacts

associated with all seasons of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has been used during the summer and fall months. Therefore, the impacts associated with those seasons of use would likely continue to be most prevalent under Alternative 1.

The Bridge Creek allotment is currently not meeting the Standards associated with the riparian-wetland resources. Since the season of use and other terms would be the same as the current situation, the allotment would continue to fail to meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.4.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.4.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1, it is expected that grazing would occur in the same manner that it has in the past, which occurs each year between July 1 and October 31. This would result in maintenance of the existing conditions on this allotment, in that the upland perennial grass components would remain in a decreased condition and juniper encroachment would continue. This would eventually result in a reduction of sagebrush, perennial grasses, and forbs.

Riparian habitat

Riparian habitats would continue to be grazed during the hot summer, which would result in livestock loafing in riparian habitats. Riparian habitats would continue to have over-utilization, a lack of hydric vegetation, and high levels of bank alteration. This would prevent the riparian habitats from reaching their potential extent and complexity, which would limit the cover and forage for riparian-dependent species.

Sage-grouse habitat

Currently, the necessary canopy cover and height for sagebrush, perennial grasses, and forbs are adequate on the Bridge Creek allotment. However juniper encroachment into shrub steppe habitat limits the quality of the habitat because it increases perching site for sage-grouse predators and decreases visibility for sage-grouse. Eventually juniper also out-competes shrub steppe vegetation and reduces cover from sagebrush and perennial grasses. Under this alternative, the Bridge Creek allotment would not meet Standard 8.

3.3.4.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.4.2.1.7 Cultural Resources

No recorded sites are within a 100-meter radius of an identified livestock congregation area. Consequently, no known historic properties would be affected by this alternative.

3.3.4.2.2 Alternatives 2-4

Under Alternatives 2, 3 and 4, the Bridge Creek allotment would be part of the newly configured Pickett Creek allotment (see Section 2.4.15). The environmental consequences affecting all resources within the Pickett Creek allotment are analyzed under the Red Mountain allotment in Sections 3.3.15.2.2 -3.3.15.2.4.

3.3.4.2.3 Alternative 5

3.3.4.2.3.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing-season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. While progress would not be made toward meeting Standard 4 due to altered fire regimes and juniper encroachment, progress toward meeting the ORMP objective to improve vegetation health and condition would be made.

3.3.4.2.3.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because adverse impacts to soils from seasonal grazing and active growing season use would be eliminated (see Section 3.2.2.6). However, soils would continue to be susceptible to reduced stability as juniper encroachment alters soil infiltration and water-holding capacity over time. As a whole, Alternative 5 would not make progress toward improving soil and hydrologic function over the life of the permit primarily due to the continued expansion of juniper.

3.3.4.2.3.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.4.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.4.2.3.5 Wildlife and Special Status Animals

Under this alternative, no grazing would be authorized on public lands within the Bridge Creek allotment for a term of 10 years. Juniper encroachment would continue and eventually result in a reduction of sagebrush, perennial grasses, and forbs. Under this alternative, the Bridge Creek allotment would not meet Standard 8 for upland wildlife species.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, well-developed riparian areas that provide improved habitat for riparian dependent species such as the sage-grouse and migratory birds. However, juniper encroachment in the uplands surrounding the riparian habitats may deter sage-grouse from passing through the juniper habitats to access the riparian habitats. Under this alternative the riparian habitats would make progress toward meeting Standard 8.

3.3.4.2.3.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.4.2.3.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.5 Browns Creek Allotment

3.3.5.1 Browns Creek Allotment Affected Environment

3.3.5.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-17 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Browns Creek allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-17: Ecological sites mapped for the Browns Creek allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	1,389
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	91
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	510
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	296
	¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	75
Pasture 2	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	1,383
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	10
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	108
	Browns Creek total acres		3,862

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

In addition to mapping ecological sites listed in Table VEG-17 above, the vegetation inventory for the Browns Creek allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-18 is a summary of ecological condition within the Browns Creek allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-18: Ecological condition for public lands in Browns Creek allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Browns Creek Allotment (0585)	64%	0%	0%	0%	36%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; a similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition (excluding that portion of the allotment that has been seeded to nonnative species), the objective to improve applies to the Browns Creek allotment.

Additionally, current vegetation in the Browns Creek allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-19.

Table VEG-19: Current vegetation in the Browns Creek allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	0	0%
BIG SAGE	1939	50%
BIG SAGE MIX	8	0%
BITTERBRUSH	1	0%
BUNCHGRASS	159	4%
CONIFER	0	0%
EXOTIC ANNUAL	175	4%
GREASEWOOD	5	0%
JUNIPER	5	0%
LOW SAGE	9	0%
MOUNTAIN BIG SAGE	19	0%
MOUNTAIN SHRUB	0	0%
RABBITBRUSH	25	1%
SALT DESERT SHRUB	1515	39%
SEEDING	6	0%
SPARSE VEGETATION	11	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	10	0%
UNKNOWN/NO DATA	0	0%
Total:	3,888	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-17 and VEGE-18. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are not apparent between potential vegetation and current vegetation. Although limited acreage of exotic annuals are indicated in PNNL data, site potential salt desert shrub and sagebrush communities dominate within the allotment, consistent with site potential.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 5 (Seedings) is not met in pastures 1 and 2 of the Browns Creek allotment, although significant progress has been made between 2008 and 2011 toward meeting the standard. Rangeland health assessments completed in both pastures in 2002, as well as monitoring completed through 2008 at nested frequency trend sites and photo plot studies, indicate that limited crested wheatgrass was maintained prior to 2002, following rehabilitation efforts in the 1960s. Remaining native perennial bunchgrass species are limited to weakened Sandberg bluegrass and few, if any, deep-rooted native perennial bunchgrasses (Thurber's needlegrass or Indian ricegrass). An overall moderate departure of biotic integrity from reference site conditions leads to a conclusion that Standard 5 is not met. This conclusion is supported by photos accompanying the RHAs identifying that perennial herbaceous and shrub species diversity was inadequate to provide appropriate litter and standing dead plant material for site protection and for decomposition to replenish soil nutrients relative to site potential. The qualitative assessment indicates that the vegetation composition of both pastures does not adequately contribute to nutrient cycling, energy flow, and hydrologic cycling consistent with reference site conditions.

Recent trend monitoring, a nested plot frequency transect at one monitoring site and two photo plots in 2008 and 2011 indicate a recent short-term upward trend with greater frequency and improved health and vigor of the non-native seeded crested wheatgrass and Sandberg bluegrass. Although no deep-rooted native perennial bunchgrass species with potential to be present under reference site conditions have been recorded at the trend site through dates of monitoring, improving health and vigor of the species seeded in rehabilitation efforts and the native shallow-rooted perennial species indicate significant progress toward meeting Standard 5. In addition, these trend data indicate short-term progress toward meeting the ORMP objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas.

To summarize, although the Browns Creek allotment is not meeting Standard 5, significant progress is made toward meeting that standard in both pastures of the allotment. Recent grazing management practices with rest from grazing in alternate years in both pastures has allowed an upward trend in condition of seeded crested wheatgrass and shallow-rooted perennial bunchgrass composition and meeting the ORMP objective to improve unsatisfactory vegetation health/condition in the Browns Creek allotment.

3.3.5.1.2 Soils

Past livestock grazing management practices are significant causal factors for not meeting upland watershed Standard 1 in the Browns Creek allotment pastures 1 and 2. Signs of soil loss are primarily historic due to water flow patterns and erosion relics that indicate decreased watershed function. Soil surface resistance to erosion is reduced due to a lack of litter, soil organic matter, and adequate persistent cover.

Parts of the allotment were plowed and seeded to crested wheatgrass in the 1960s, and actual use shows that the spring grazing is generally alternated yearly between the pastures. Recent monitoring from a nested plot frequency transects and two photo plots indicate a short-term improvement of the non-native

crested wheatgrass, Sandberg bluegrass, and litter. Ground cover trend data also show a slight upward trend and a reduction in bare ground that indicate long-term progress. However, the perennial herbaceous and shrub species diversity indicates that the vegetation composition is inadequate, altering hydrologic function and lacking soil stability.

Much of the grasses and biological soil crusts grow underneath shrubs, while interspaces remain bare, resulting in surface sealing, ponding, and increased water flow. Litter and standing dead plant material for site protection and for decomposition to replenish soil nutrients are available but are reduced and only provide limited protection to erosion; some physical damage is present and has resulted in compaction. The decreased ecological function and impaired soils indicate that soil and hydrologic function are compromised. While trend data indicate short-term progress toward meeting the ORPM soil management objective, historic livestock management is the primary contributing factor for not meeting Standard 1 in Browns Creek allotment.

3.3.5.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁴

Standards 2 and 3 are not being met in both pastures of the Browns Creek allotment. Cat Creek and an unnamed tributary combine and form Browns Creek at the lower end of pasture 1, and Browns Creek continues to flow through pasture 2. These two creeks were not identified as fisheries habitat in the 1999 Owyhee Resource Management Plan (ORMP). Approximately 3.1 stream miles of Browns Creek and its tributaries occur within the allotment.

The most recent assessments identify 3.1 miles of stream are FAR; however, 2.5 miles were re-visited in 2012 and classified as ephemeral; thus, the PFC protocol was not applied. The 2000 assessments identify areas along the streams that were FAR that had inadequate deep-rooted hydric vegetation that aid in stabilizing stream banks and dissipating energy during high flows, and there is erosion and deposition occurring. There were areas where the channels were incised, skewing the width-to-depth ratios that, in turn, prevent frequent inundation and development of the floodplains.

Table RIPN-18: Browns Creek allotment riparian condition

	Allotment & Pasture Stream Miles & Condition			
Stream Name	Browns Creek-01	Browns Creek-02	Assessment Issues/ Impacts Identified	Total Miles
Browns Creek	1.8 (FAR-2000)	0.6 (FAR- 2000)	unstable, poorly vegetated banks/ overwide channel	2.4
Browns Creek lower	0.3 (NA- 2012)	0.6 (NA- 2012)	ephemeral- PFC not applied	0.9
Browns Creek upper	1.5 (NA- 2012)		ephemeral- PFC not applied	1.5
Browns Creek Trib	0.3 (FAR-2000)		erosion/ deposition occurring/ poor water holding capacity in banks/ poorly established riparian veg	0.3

¹⁶⁴ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Whitehorse/Antelope (0541), Toy (0533), Browns Creek (0585), and West Castle (0648) Allotments* document on the Idaho BLM Group 3 website or available upon request from the Owyhee Field Office.

	Allotment & Pasture Stream Miles & Condition			
Stream Name	Browns Creek-01	Browns Creek- 02	Assessment Issues/ Impacts Identified	Total Miles
Cat Creek (Browns Creek Trib)	0.4 (FAR-2000)		½ of longer reach 2 water gaps present/ overwide channel/ erosion & deposition occurring/ inadequate riparian veg for bank protection	0.4

Standard 7 is not being met in the Browns Creek allotment. For IDEQ water quality information associated with the Browns Creek allotment, see table RIPN-3.

3.3.5.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.5.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Browns Creek allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013f).

Browns Creek allotment is divided into two pastures. The major habitat type is sagebrush steppe, but most has been altered by plowing and seeding crested wheatgrass in the 1960s; therefore, Standard 4 does not apply.

Sage-grouse use habitats within the allotment during the breeding and winter seasons (IDFG, unpublished data). There are no known leks located within the Browns Creek allotment, but there are four active leks within 1 mile of the allotment boundary. Current livestock grazing management practices are the causal factor for not meeting Standard 8 wildlife in riparian habitats.

Table WDLF-5: Focal habitats that are present on the Browns Creek allotment and whether current conditions within the pasture are limiting the quality of those habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	<ul style="list-style-type: none"> - Standard 4 does not apply. - Reduced abundance of native deep-rooted perennial grasses - Crested wheatgrass is common and is dominant bunchgrass - Cheatgrass is common
Riparian habitats Cat Creek Browns Creek	Limiting	<ul style="list-style-type: none"> - Inadequate hydric vegetation to stabilize stream banks - Active erosion is occurring. - Stream channel is incised. - Redband trout are not present. - Spotted frogs are not present.

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Sage-grouse Preliminary Priority Habitat Breeding Winter	Limiting	<ul style="list-style-type: none"> - Inadequate canopy cover and height of deep-rooted perennial grasses and forbs - Increased canopy cover of crested wheatgrass - Increased canopy cover of cheatgrass

3.3.5.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.5.1.7 Cultural Resources

The Browns Creek allotment contains 14 previously recorded sites and all are prehistoric locations. Although none of these sites are within 100 meters of an identified livestock congregation area, BLM staff monitored two sites (10OE840 and 10OE938) to gauge their conditions and to learn if there are any undocumented disturbances associated with livestock. Neither site is experiencing any effects from grazing activities. Field staff monitored no other sites.

BLM staff surveyed all nine of the potential livestock congregation areas identified in the allotment and recorded three new cultural sites. Site 13-O-03S5 is a prehistoric location that has minor trampling and trails from livestock up to 6 centimeters deep over approximately 10 percent of its surface area. These surficial disturbances are not affecting the site's NRHP potential. Site 13-O-03S4 is a large catchment works with several check dams that may be the result of a Civilian Conservation Corps project. There are no grazing-related impacts affecting the site. Both sites are of undetermined NRHP status. Site 13-O-03S6 is a narrow rock dam straddling a creek and is not affected by livestock activities. The site is not eligible for the NRHP.

3.3.5.2 Browns Creek Allotment Environmental Consequences

3.3.5.2.1 Alternative 1

3.3.5.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of the current permit with a reduction of livestock numbers and the resulting reduction of active AUMs authorized. Standard 5 is not met in the allotment, but significant progress is being made, with upward trend and greater frequency and improved health and vigor of the non-native seeded crested wheatgrass and Sandberg bluegrass recorded. Although the current grazing schedule includes growing-season grazing in 1 of each 2-year cycle in each of the two pastures of the allotment, the alternate year has scheduled rest that allows an opportunity for the seeded species to regain vigor. Crested wheatgrass evolved under greater grazing pressure than the native cool-season bunchgrass species present in the Owyhee Uplands. Impacts to health and vigor of introduced perennial bunchgrasses, which are preferred forage plant species, would occur with alternate-year scheduled growing season use in each pasture of the allotment. However, continuation of the utilization levels in the light category recorded in recent years (See Appendix B) and rest in alternate years would provide opportunity for adequate recovery of health and vigor (Appendix E).

Under Alternative 1, progress toward meeting Standard 5 would continue to occur due to alternate-year rest following a year of growing season grazing, although at light utilization levels. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition would be met.

3.3.5.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts from historic grazing currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.5.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.5.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.5.1), pasture one of the Browns Creek allotment would be available to grazing during the spring for one year and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 19.8 mile of intermittent/ ephemeral stream would be affected by the impacts associated with the spring season of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the spring, as well as rested; therefore, the impacts of spring grazing and rest would likely continue to be most prevalent under Alternative 1.

Although the current situation represents 34 percent fewer active AUMs than the current permit, the Browns Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons, it would continue to fail to meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.5.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.5.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1 each pasture would receive one full year of rest every other year. Additionally neither pasture would be grazed during the hot season in any year. Upland habitats would be expected to maintain their current state, and crested wheatgrass would maintain its vigor and abundance. If any native deep-rooted perennial grasses and forbs are present, they would be able to maintain their vigor and abundance as well. Seedlings of native perennial grasses and forbs would have to compete with non-native cheatgrass and crested wheatgrass to become established.

Riparian habitat

Riparian habitat would continue to exhibit the same condition as in the current situation. Banks would lack sufficient vegetation to stabilize banks and the stream channels would continue to be incised. Woody vegetation would be maintained and continue to provide some cover and forage for riparian dependent species. Typically a year of rest every other year would be expected to allow riparian habitats to increase hydric vegetation and stabilize soils but that is not happening on the Browns creek allotment. Given that the riparian habitats are not in Proper Functioning Condition with the current management, continuing with the current management would not allow riparian habitats to progress toward Proper Functioning Condition.

Sage-grouse habitat

The Browns Creek allotment would continue to provide some level of sage-grouse habitat in the breeding, summer, and winter seasons. However, the lack of hiding cover from tall perennial grasses and the

abundance of cheatgrass would decrease cover and forage, and therefore, nest and brood survivorship would be reduced compared to more intact habitats. Crested wheatgrass does provide cover of sufficient height for sage-grouse habitat. Seeded areas often have lower forb abundance than undisturbed sites. Sage-grouse will use habitats with crested wheatgrass, but their reproductive success and survivorship are generally expected to be lower than in undisturbed habitats.

Under Alternative 1, this allotment would make progress toward meeting Standard 8 until cheatgrass and introduced crested wheatgrass limit the productivity of the habitat.

3.3.5.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.5.2.1.7 Cultural Resources

There are three cultural sites within 100 meters of a livestock congregation area. None of these sites are adversely affected by grazing activities. Therefore, no known historic properties would be affected by this alternative.

3.3.5.2.2 *Alternative 2*

3.3.5.2.2.1 Vegetation

Under Alternative 2, the permittee applied to maintain active authorized use at 793 AUMs and to implement the existing grazing schedule with alternate-year rest scheduled for the two-pasture allotment. Scheduled grazing would occur in each of the two pastures in alternative years during the active growing season for cool-season introduced species.

Standard 5 was not met in the allotment, but significant progress was made, with upward trend and greater frequency and improved health and vigor of the non-native seeded crested wheatgrass and Sandberg bluegrass recorded. Although the continuation of the existing grazing schedule includes growing-season grazing in one of each 2-year cycle in each of the two pastures, the alternate year has scheduled rest that allows an opportunity for the seeded species to regain vigor. Crested wheatgrass evolved under greater grazing pressure than the native cool-season bunchgrass species present in the Owyhee Uplands. Impacts to health and vigor of introduced perennial bunchgrasses, preferred which are forage plant species, would occur with alternate-year scheduled growing season use in each pasture of the allotment, and the intensity of grazing use would be greater than would occur under Alternative 1 with more AUMs authorized and a greater number of cattle. Continuation of the utilization levels that do not exceed the light category recorded in recent years (See Appendix B) and rest in alternative years would provide opportunity for adequate recovery of health and vigor (Appendix E).

Under Alternative 2, progress toward meeting Standard 5 would continue to occur due to alternate-year rest following a year of growing season grazing, although at light utilization levels. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition would be met.

3.3.5.2.2.2 Soils

Alternative 2 for the Browns Creek allotment would provide 1 out of 2 years of rest from spring grazing for both pastures and be similar to Alternative 1. While physical impacts would be reduced during the wettest period and soils would benefit from avoiding grazing during the critical growing season one year, the allotment would see an increase in livestock numbers and active AUMs. This would not provide opportunity to increase soil stability due to the inability of native plant communities to remain healthy, vigorous, and productive during active growth. As a whole, the allotment would not make progress

toward improving soil and hydrologic function with Alternative 2, compared to Alternative 1 (see Section 3.2.2.3).

3.3.5.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.5.2), pasture one of the Browns Creek allotment would be available to grazing during the spring for one year and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 19.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring season of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the spring, has been rested, and is not meeting the riparian Standards.

Although the current situation represents 34 percent less active AUMs than the current permit, the Browns Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Under Alternative 2, the allotment would be used during the same seasons and would authorize the active AUMs from the current permit (34 percent more than Alternative 1). Therefore, it would continue to fail to meet the riparian-wetland Standards under this alternative

3.3.5.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.5.2.2.5 Wildlife and Special Status Animals

Grazing management under Alternative 2 would result in similar impacts to those described under Alternative 1, except that there would be a 52 percent increase in active AUMs. This would increase the intensity of use in each pasture every other year.

Upland habitat

In upland habitats, increased AUMs would result in heavier use in the years where grazing occurs during the active growing season. Perennial grasses that are heavily grazed during the active growing season are less vigorous and produce less herbage and seed the following year when compared to grasses only lightly grazed during that same time. Fewer and less-vigorous perennial grasses provide less hiding and nesting cover, which limits the quality of the habitat for shrub steppe-dependent species.

Riparian habitat

In riparian habitats, increased AUMs would result in less residual herbaceous vegetation to stabilize banks and lower vigor for woody species.

Sage-grouse

Increased intensity of use would result in shorter perennial grasses and forbs, as cattle would graze them more closely. This would reduce hiding and nesting cover for sage-grouse and would decrease nesting success.

Under Alternative 2 the increased intensity of use would ensure that this allotment would not make progress toward meeting Standard 8.

3.3.5.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Additional AUMs and cattle could lead to additional labor and feed costs, but the additional cattle could bring in more revenue from the sale of animals.

3.3.5.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.5.2.3 Alternative 3

3.3.5.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 1 of 2 years by continuing the existing grazing schedule that plans rest in alternate years for each of the two pastures in the allotment. . In addition, the intensity of grazing use would not exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30. Additionally, a reduction in the number of cattle that graze within the allotment would result in an allotment-wide stocking rate of approximately 12 acres per AUM, compared to the current permit with 4.8 acres per AUM, which is a reduction in the intensity of grazing use occurring in both pastures. This reduction, especially when that use occurs during the active growing season, would provide greater opportunity for introduced cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. Limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 1 in 2 years would allow introduced cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be continued toward meeting Standard 5 and the ORMP objective to improve vegetation health and condition.

3.3.5.2.3.2 Soils

Alternative 3 would provide 1 out of 2 years of rest from spring grazing and critical growing season use for both pastures and does not differ from Alternative 1. The benefit of Alternative 3 comes from a decrease in livestock numbers, active AUMs, and adjusted stocking rates. This would result in additional reductions in physical impacts to soils during the wettest period of the year but more importantly an increase in the ability of the native plant and seeded communities to remain healthy, vigorous, and productive during active growth, especially because they have already been showing recent significant improvement. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function resulting from Alternative 3 is therefore expected to be better than with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.5.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.5.3), pasture one of the Browns Creek allotment would be available to grazing during the spring for one year and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 19.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring season of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the spring, has been rested, and the riparian Standards are not being met.

Under current management, the Browns Creek allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be used during the same seasons; however, it would be rested 5 out of 10 years over the course of the 10-year permit. Additionally, the Alternative would incorporate a 76 percent reduction in active AUMs. Therefore, the allotment would meet the riparian-wetland Standards and ORMP objectives under this alternative.

3.3.5.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.5.2.3.5 Wildlife and Special Status Animals

Under Alternative 3, the grazing system would be the same as described for Alternatives 1 and 2, except that utilization limits would be implemented on the uplands to mitigate the effects of grazing during the active growing season every other year. Additionally active AUMs would be reduced by 76 percent compared to Alternative 1. This would result in similar impacts to those described under Alternative 1, but grazing intensity would be much lower when pastures are grazed.

Upland habitat

Perennial grasses and forbs would be more lightly grazed and would continue to be rested every other year, which would increase in vigor and reproductive capability. This would increase cover and forage for shrub steppe-dependent species.

Riparian habitat

With utilization limits, reduced grazing intensity, and rest every other year, riparian habitats would continue to increase in structure and complexity, which would increase the number and types of habitats available for riparian-dependent species. Woody and herbaceous riparian vegetation would grow, reproduce, and establish without disturbance from grazing every other year. Expanding riparian vegetation would stabilize banks and provide nesting and hiding cover and additional forage for riparian-dependent species.

Sage-grouse habitat

Cover and forage would increase, which would provide additional suitable nest site locations and increase nest success and survivorship for sage-grouse. However, cheatgrass would continue compete with tall statured perennial grasses and possibly limit their increases in vigor and abundance.

Under Alternative 3, this allotment would make progress toward meeting Standard 8 until cheatgrass and introduced crested wheat limit the productivity of the habitat.

3.3.5.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer AUMs and cattle could lead to additional labor and feed costs, and fewer cattle could bring in less revenue from the sale of animals.

3.3.5.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.5.2.4 Alternative 4

3.3.5.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 2 of 3 years. The grazing schedule would result in both pastures being rested in one of each 3-year cycle. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment, resulting in a stocking rate of approximately 12 acres per AUM, compared to the current permit with 4.8 acres per AUM. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for introduced cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. Limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 2 in 3 years would allow introduced cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Progress would be made toward meeting Standard 5 and the ORMP objective to improve vegetation health and condition.

3.3.5.2.4.2 Soils

Alternative 4 would provide 2 out of 3 years of rest from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. While Alternatives 3 and 4 provide for the same decrease in livestock numbers, active AUMs, and adjusted stocking rates, Alternative 4 takes it further by incorporating more rest. This would result in additional reductions in physical impacts to soils during the wettest period of the year but more importantly provide an increase in the ability of the native plant and seeded communities to remain healthy, vigorous, and productive during active growth, especially because they have already been showing recent significant improvement. In return, increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion would be expected. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.5.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.5.4), pasture 1 of the Browns Creek allotment would be available to grazing during the spring for one year and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 19.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring season of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the spring, has been rested, and the riparian Standards are not being met.

Under current management, the Browns Creek allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year schedule that incorporates 2 in 3 years of rest. The pastures within the allotment would be rested 6 and 7 out of 10 years over the course of the 10-year permit. Additionally, the alternative would incorporate an 84 percent reduction in active AUMs. Therefore, the allotment would meet the riparian-wetland Standards and ORMP objectives under this alternative.

3.3.5.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.5.2.4.5 Wildlife and Special Status Animals

Under Alternative 4, each pasture would receive 2 complete years of rest for every 1 year that it is grazed during the active growing season. Active AUMs would also be reduced by 76 percent compared to Alternative 1. The scheduled rest would allow upland and riparian plants to complete their lifecycle twice every 3 years without disturbance from grazing. Palatable plants would be more vigorous, and reproduction and establishment would increase. The habitats would become more complex and provide increased cover and forage for wildlife species. Responses from each habitat type would be the same as described in Alternative 3 but would occur more rapidly. Two years of rest would allow increased vigor for deep-rooted perennial grasses and forbs and would allow them to better compete against the non-native species for establishment. Under Alternative 4, this allotment would make progress toward meeting Standard 8.

3.3.5.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. Fewer AUMs and cattle and an extra year of required rest on both pastures could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.5.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.5.2.5 Alternative 5

3.3.5.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing-season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 5 and the ORMP objective to improve vegetation health and condition.

3.3.5.2.5.2 Soils

The implementation of this alternative would continue to not make progress toward meeting Standard 1 because of altered hydrologic function from the current lack of potential vegetation and localized invasion of annuals in these low elevation. Additionally, the ORMP objective to maintain or improve watershed health and condition would not be achievable. While Alternative 5 would provide the most benefits when compared to all alternatives, the allotment would not progress toward meeting standard 1 with livestock grazing not being a significant factor.

3.3.5.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.5.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.5.2.5.5 Wildlife and Special Status Animals

Under this alternative, no grazing would be authorized on public lands within the Browns Creek allotment for a term of 10 years. Both riparian and upland habitats would be rested from grazing completely for 10 years. This would allow bunchgrasses and perennial forbs to reproduce, establish, and improve the quality of sage-grouse habitat by increasing the canopy cover of tall perennial grasses and perennial forbs. This alternative would remove livestock as a competitor within the ecosystem, and wildlife habitat would improve. Cheatgrass and crested wheatgrass would continue be a major component of the plant community and would limit the potential of the sage-grouse habitat within the allotment. Under this alternative, the Browns Creek allotment would make progress toward meeting Standard 8 for upland habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, well-developed riparian areas that provide improved habitat for riparian dependent species such as the sage-grouse and migratory birds. Under this alternative, the riparian habitats would make progress toward meeting Standard 8.

3.3.5.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.5.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.6 Garrett FFR Allotment

3.3.6.1 Garrett FFR Allotment Affected Environment

3.3.6.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-20 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Garrett FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-20: Ecological sites mapped for the Garrett FFR allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	1
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	91
Pasture 2	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	trace
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	28
Pasture 3	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	27
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	trace
	¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	36
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	14
	UNKNOWN/NO DATA		trace
Pasture 4	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	179
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	trace
	¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	8
	UNKNOWN/NO DATA		6

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 5	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	74
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	10
	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	36
	¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	7
Pasture 6	¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	58
	UNKNOWN/NO DATA		83
	Garrett FFR total acres		660

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-20 above, the vegetation inventory for the Garrett FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-21 is a summary of ecological condition within the Garrett FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-21: Ecological condition for public lands in Garrett FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Garrett FFR (0626)	45%	40%	5%	10%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE 1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early

seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Garrett FFR allotment.

Additionally, current vegetation in the Garrett FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-22.

Table VEG-22: Current vegetation in the Garrett FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	108	3%
ASPEN	22	1%
BIG SAGE	619	20%
BIG SAGE MIX	21	1%
BITTERBRUSH	6	0%
BUNCHGRASS	297	9%
CONIFER	21	1%
EXOTIC ANNUAL	276	9%
GREASEWOOD	1	0%
JUNIPER	293	9%
LOW SAGE	164	5%
MOUNTAIN BIG SAGE	838	27%
MOUNTAIN SHRUB	303	10%
RABBITBRUSH	4	0%
SALT DESERT SHRUB	58	2%
SEEDING	10	0%
SPARSE VEGETATION	3	0%
STIFF SAGE	0	0%
URBAN	1	0%
WATER	0	0%
WET MEADOW	103	3%
UNKNOWN/NO DATA	0	0%
Total:	3,148	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEG-20 and VEG-21. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently a component of a portion of the landscape in the Garrett FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident when comparing the two tables. Past fires and other disturbances are indicated by the limited presence of exotic annuals and the dominance of rabbitbrush in the current vegetation. The proportion of bunchgrass dominated communities in PNNL data is consistent with the range of variability of reference site conditions with natural disturbance regimes.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is met in the six pastures that make up the Garrett FFR allotment. Public land upland vegetation communities within the six pastures of the Garrett allotment are primarily the slopes and benches associated with private land in valley bottoms. As noted in the 2006 findings of the Initial Allotment Review, six Rangeland Health Evaluations were completed on the allotment in 2002. Sites had a none-to-slight to moderate-to-extreme departure from Ecological Site Descriptions. However, the latter rating was due to the presence of invasive plants (cheatgrass) and western juniper encroachment. The overall departure of biotic integrity from reference site conditions at the six assessment sites was rated none-to-slight or slight-to-moderate.

Reported annual grazing use of the Garrett FFR allotment in the fall through early winter season in recent years, a period of limited impact to upland vegetation communities, is consistent with the finding that Standard 4 is met.

Although juniper trees are noted in the 2002 assessment and present within associated photos for pasture 3 and in 2011 GIS NAIP imagery, their presence on the landscape is limited to ridges and some draws and is not so widespread as to limit the vegetation community as a whole from providing proper nutrient cycling, hydrologic cycling, or energy flow.

To summarize, the Garrett FFR allotment is meeting Standard 4, although with increasing juniper encroachment into vegetation communities that should not include juniper in excess of a few scattered trees in any of the reference site conditions. No data for trend are available, but consistent late-fall and early winter grazing use is conducive toward maintaining and improving native bunchgrass health and vigor and meeting the ORMP vegetation objective to improve unsatisfactory vegetation health/condition in the Garrett FFR allotment.

3.3.6.1.2 Soils

Watershed indicators show little departure from expected conditions for the ecological site in pastures 2, 3, 4, and 5. Areas in pasture 1 contain increased water flow patterns, although all other soil and hydrologic function-related indicators vary between none-to-slight and slight-to-moderate.

Overall, the pastures contain stable soils that display historic and some active impacts, although abundant gravel, adequate litter, and plant diversity are in place to decrease erosion potential. While the biotic function is reduced in localized areas of pastures 4 and 5 due to an increase in cheatgrass and western juniper, soil and hydrologic indicators show that watershed function still maintains proper nutrient and hydrologic cycling and energy flow. Current livestock management is compatible with attainment of Standard 1 for the Garrett FFR allotment.

3.3.6.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁵

The Garrett FFR allotment is not meeting Standards 2 and 3 but pastures 2 and 6 are making significant progress toward meeting the standards. The standards are being met in pasture 4 and are not applicable in pastures 1, 3, and 5. The named streams that occur on BLM lands in pastures 2, 4, and 6 are Alder,

¹⁶⁵ For additional details on the current condition of the allotment, see the *Supplemented Garrett FFR (0626) Initial Allotment and Permit/Lease Review and Rangeland Health Assessment* document on the BLM Idaho Group 3 website or available from the Owyhee Field Office

Castle, and Horse Thief Creeks. A short reach of Alder Creek was rated FAR in 2000, but appeared to be in PFC in 2011. Although there is a private water right and a road affecting the stream, the vegetation was vigorous, the banks were well-protected and stable, and both fish and beaver were present. Three short reaches of Castle Creek occur on BLM lands in pastures 4 and 6; the reach in pasture 4 and one of the reaches in pasture 6 was in PFC in 1999 and appeared in PFC again in 2011; the second reach in pasture 6 was rated FAR in 1999, but appeared to be in PFC in 2011. Horse Thief Creek traverses pasture 4 and was visited in 2011. An assessment was not conducted, but the stream appeared to be in PFC. The stream is geologically confined and well-protected with rock and willows.

Table RIPN-19: Garrett FFR allotment riparian condition

Stream Name	Allotment & Pasture Stream Miles & Condition			Assessment Issues/ Impacts Identified	Total Miles
	Garrett FFR-02	Garrett FFR-04	Garrett FFR- 06		
Alder Creek	0.2 (FAR-2000) (not assessed-2011)			overwide channel/ high erosion & deposition/ lateral instability/ inadequate deep rooted & vigorous vegetation	0.2
Castle Creek		0.4 (PFC- 1999) (pictures only/ not assessed- 2011)	0.4 (FARS- 1999) 0.3 (PFC- 1999) (pictures only/ not assessed- 2011)	inadequate vegetation cover/ bar banks/ incised channel/ lateral instability	1.1
Horse Thief Creek		0.5 (pictures only/ not assessed- 2011)		intermittent/ dry/ armored with boulders and geologically confined	0.5

Standard 7 is being met in the Garrett FFR allotment. For IDEQ water quality information associated with the Garrett FFR allotment, see table RIPN-3.

3.3.6.1.4 Special Status Plants

There is one special status plant species that occurs within the Garrett FFR allotment, Simpson's hedgehog cactus. The occurrence of this special status plant is meeting Standard 8. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006 and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation, and determination documents. The BLM used information in those documents to address the Allotment-specific Affected Environment.

3.3.6.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Garrett FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013g).

Garret FFR allotment consists of six pastures and is dominated by sagebrush steppe habitat and is used by sage-grouse during the breeding summer and winter seasons (IDFG, unpublished data).

Table WDLF-6: Focal habitats that are present on the Garret allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Not Limiting	<ul style="list-style-type: none"> - Functional structural groups are all present at expected levels. - Slight encroachment of juniper in some areas of the allotment - Cheatgrass is common in some portions of the allotment.
Riparian habitats Castle Creek Alder Creek Horse Thief Creek	Limiting but improving (pastures 2 and 6) Not Limiting (pasture 4) Not Applicable (pastures 1, 3, and 5)	<ul style="list-style-type: none"> - Vegetation is vigorous - Banks are well protected and stable - Habitat is improving based on comparisons between 1999 and 2011 visits. - Redband trout are present. - Spotted frogs are not present. - Pastures 1, 3, and 5 have no riparian habitat.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Not Limiting	<ul style="list-style-type: none"> - No sage-grouse habitat assessments were completed for pastures 1, 3, 4, and 6; refer to upland plant community. - Adequate canopy cover from deep-rooted perennial grasses - Adequate canopy cover and height from sagebrush - adequate abundance of forbs -deep-rooted perennial grasses were shorter than desired.

3.3.6.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.6.1.7 Cultural Resources

There are no sites recorded in the Garrett FFR allotment and there are no potential livestock congregation areas identified on BLM administered land either. Consequently, cultural resources staff did not conduct any monitoring visits or complete any new surveys.

3.3.6.2 Garrett FFR Allotment Environmental Consequences

3.3.6.2.1 Alternative 1

3.3.6.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently reported using the six pastures of the allotment between these dates. In addition, Standard 4 was met in Garrett FFR allotment, leading to a conclusion that current grazing management practices are consistent with appropriate seasons of grazing use (Appendix E).

On land within the allotment that includes significant private land ownership (no more than 21 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the

ORMP. It is assumed that this practice would be continued, leading to a conclusion that the intensity of grazing under Alternative 1 would not lead to adverse impacts to vegetation resources.

Standard 4 would continue to be met in the allotment, with livestock management practices at the discretion of the permittee that limit seasons and intensities of use as identified in the 2013 determination. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.6.2.1.2 Soils

Under Alternative 1, the Garrett FFR allotment would meet Standard 1 and ORMP objectives and would continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.6.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.6.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.6.1), the Garrett FFR allotment would be available to grazing year-round annually, without rest or riparian area constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 1.4 miles of perennial streams and 1.9s mile of intermittent/ ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Pastures 2, 4, and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the winter months; therefore, the impacts of winter grazing would likely continue to be most prevalent under Alternative 1.

Under current management, the Garrett FFR allotment is not meeting the Standards associated with the riparian-wetland resources, but is making significant progress toward meeting. Since the allotment would be used during the same seasons, and use would be at the discretion of the permittee, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.6.2.1.4 Special Status Plants

There is one SSPS in this allotment, Simpson's hedgehog cactus. Standards 2 and 3 of the applicable Standards for Rangeland Health are not being met in the Garrett FFR allotment. The number of livestock and conditions of the existing permit would be included in the permit offered. This allotment contains a high percentage of private land and would be unchanged from the existing permit and at the discretion of the permittee. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. Simpson's hedgehog cactus is not an obligate to riparian habitat; however, adverse effects on the overall special status plant site include habitat degradation and decreased population viability, as described in the Common to All Grazing Alternatives (Section 3.2.4.1). Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species.

3.3.6.2.1.5 Wildlife and Special Status Animals

Under Alternative 1, grazing practices would remain the same as those that led to the current conditions described under the affected environment. The permittee would continue to have the flexibility to graze the public land within this allotment at his discretion. The seasons of use and the intensity of grazing that

resulted in the current conditions on this allotment are unclear. This allotment is currently meeting Standard 8 and would continue to make progress toward meeting under Alternative 1.

Upland habitat

Uplands would remain in generally good condition, with all of the functional structural vegetation groups being present at expected abundances. However, both cheatgrass and juniper encroachment would continue to be present in portions of the allotment.

Riparian habitat

Riparian habitats would continue to expand and increase in complexity which would increase forage and cover for riparian dependent wildlife species.

Sage-grouse habitat

Sage-grouse habitats would continue to have a sufficient abundance of deep-rooted perennial grasses and sagebrush. Forbs would continue to be present and provide forage for sage-grouse.

This allotment would continue to make progress toward meeting Standard 8 if the current grazing practices continue.

3.3.6.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.6.2.1.7 Cultural Resources

Because there are no recorded cultural sites and no identified livestock congregation areas in the allotment, no known historic properties would be affected by this alternative.

3.3.6.2.2 Alternative 2

3.3.6.2.2.1 Vegetation

Livestock management actions, as defined by terms and conditions, do not differ between Alternatives 1 and 2, other than the inclusion of intensity of use limitations within riparian areas. These actions would not change impacts to upland vegetation resources. The following discussion is consistent with that under Alternative 1.

Although the season of use identified under Alternative 2 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently reported using the six pastures of the allotment between these dates. In addition, Standard 4 is met in the Garrett FFR allotment, leading to a conclusion that current grazing management practices are consistent with appropriate seasons of grazing use (Appendix E).

On land within the allotment that includes significant private land ownership (no more than 21 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the intensity of grazing under Alternative 1 would not lead to adverse impacts to vegetation resources.

Standard 4 would continue to be met in the allotment, with livestock management practices at the discretion of the permittee that limit seasons and intensities of use as identified in the 2013 determination.

Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.6.2.2.2 Soils

Under Alternative 2, livestock grazing in the Garrett FFR allotment would occur year-round in all six pastures at the discretion of the permittee and would be similar to Alternative 1. In the absence of a defined grazing schedule, physical impacts during the wettest and most susceptible period are possible, while repetitive growing season use would not increase the ability of native plant communities to provide for soil stability. However, all pastures of the allotment are currently meeting the standard, with the likelihood to continue to meet standards and to maintain watershed health. As a whole, the allotment is expected to maintain soil and hydrologic function with Alternative 2 when compared to the current condition (see Section 3.2.2.3).

3.3.6.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.6.2), the Garrett FFR allotment would be available to grazing year-round annually, without rest or riparian area constraint period deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 1.4 miles of perennial streams, and 1.9 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Pastures 2, 4, and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the winter months, and the riparian Standards are not being met.

Under current management, the Garrett FFR allotment is not meeting the Standards associated with the riparian-wetland resources, but is making significant progress toward meeting. Since the allotment would be used during the same seasons, and use would be at the discretion of the permittee, it would continue to not meet the riparian-wetland Standards under this alternative

3.3.6.2.2.4 Special Status Plants

Alternative 2 is similar to Alternative 1, with no difference in active AUMs. This alternative would provide the same opportunity to increase habitat quality for SSPS as in Alternative 1.

3.3.6.2.2.5 Wildlife and Special Status Animals

Impacts to wildlife habitat under Alternative 2 would be essentially the same as those described under Alternative 1. This allotment would continue to make progress toward meeting Standard 8 if the same grazing practices continue.

3.3.6.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. There would be no impacts compared to Alternative 1 because both alternatives are the same.

3.3.6.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.6.2.3 Alternative 3

3.3.6.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 in pastures 1, 2, 4, and 6; 5/1 to 7/15 in pastures 3 and 5) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing

season when grazing is authorized between 5/1 and 6/30 or 7/15, as applicable. Limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 1 in 3 years of would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. The allotment would continue to meet Standard 4 and the ORMP objective to improve vegetation health and condition.

3.3.6.2.3.2 Soils

Alternative 3 would provide deferment from spring grazing in all six pastures in 1 out of 3 years, which would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from a minimum of 1 out of 3 years of deferment from critical growing season use for all pastures, which offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Alternative 3 also defines grazing periods and would not leave the season of use open, although livestock numbers would continue to be at the permittee's discretion. As a whole, the allotment would continue to meet and further benefit from defined grazing seasons of use. Progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.6.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.6.3), pastures 2, 4, and 6 of the Garrett FFR allotment would be available to grazing during the spring, summer, and fall for 2 years, and during the fall the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 1.4 miles of perennial streams and 1.9 miles of intermittent/ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Pastures 2, 4, and 6 contain the riparian areas. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the winter months, and the riparian Standards are not being met.

Under current management, the Garrett FFR allotment is not meeting the Standards associated with the riparian-wetland resources, but is making significant progress toward meeting. The allotment would be managed under a defined 3-year schedule that incorporates at least 1 year of riparian area constraint period deferment; however, cattle numbers would remain at the discretion of the permittee. Other mandatory terms and conditions of the permit under this alternative would include measures that would reduce impacts (stubble height, woody browse, and bank alteration) associated with the riparian areas condition. Monitoring would be required within pastures 2, 4, and 6 where and when use would occur 2 out of 3 years during the riparian constraint period, and would add assurances that the allotment would make progress toward meeting the Standards. Therefore, the allotment would continue to meet the riparian-wetland Standards under this alternative.

3.3.6.2.3.4 Special Status Plants

Grazing permits would be renewed with actions that provide yearly deferment from spring grazing, and allotment would progress toward meeting or continuing to meet standards and ORMP objectives. SSPS occurrences in the Garrett FFR allotment would maintain or improve the overall ability of native plant communities to remain stable and healthy. Alternative 3 is expected to be better for SSPS compared to Alternatives 1 and 2, but not as beneficial as Alternatives 4 or 5.

3.3.6.2.3.5 Wildlife and Special Status Animals

Alternative 3 would provide deferment of grazing during the upland growing season from 1 to 3 years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 3 would provide

deferment of grazing during the hot season from 1 to 2 years in any consecutive 3-year period in pastures with riparian habitats. Upland and riparian utilization and trampling limits also would be implemented in select pastures and years to prevent and mitigate impacts of grazing during the active growing and hot seasons.

Upland habitat

Herbaceous understory conditions would improve with less pressure from livestock grazing in the growing season, and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species.

Riparian habitat

Under Alternative 3, riparian habitats in the allotment would receive grazing deferment during the hot season 1 year in any consecutive 3-year period, which would result in less use during deferment years. Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian-dependent wildlife species. Improvements in riparian conditions also would occur during years with hot-season use because additional utilization, stubble height, and bank alteration limits would prevent overutilization and degradation of riparian habitats. Deferment of hot-season grazing in combination with intensity limitation terms and conditions would ensure that this allotment continues to make progress toward meeting Standard 8.

Sage-grouse habitat

Forbs would receive less grazing pressure and, in deferment years, would not be grazed during their active growing season which would allow them to increase in vigor and reproductive capability. Perennial grasses would increase in vigor, which would result in increased height and reproductive capability. Increased cover for sage-grouse would reduce predation on individuals and nests and would increase nesting and brood success.

This allotment would continue to make progress toward meeting Standard 8 under Alternative 3.

3.3.6.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer cattle and new pasture use rotations and dates could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.6.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.6.2.4 Alternative 4

3.3.6.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 in pastures 1, 2, 4, and 6; 5/1 to 7/15 in pastures 3 and 5) in 2 of 3 years. In addition, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 11 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.6.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. The allotment would continue to meet Standard 4 and the ORMP objective to improve vegetation health and condition.

3.3.6.2.4.2 Soils

Alternative 4 would provide a minimum of 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period in all pastures. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use that would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Alternative 4 also delineates grazing periods, would not leave the season of use at the permittee's discretion, and more clearly defines the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.6.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.6.4), pastures 2, 4, and 6 of the Garrett FFR allotment would be available to grazing during the spring, summer, and fall for one year, and during the fall the second and third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 1.4 miles of perennial streams and 1.9 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring, summer, and fall seasons of grazing alternately over the 3 years and among the pastures. Pastures 2, 4, and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the winter months, and the riparian Standards are not being met.

Under current management, the Garrett FFR allotment is not meeting the Standards associated with the riparian-wetland resources, but is making significant progress toward meeting. The allotment would be managed under a defined 3-year schedule that incorporates at least 2 years of riparian area constraint period deferment. Therefore, the allotment would meet the riparian-wetland Standards and meet the ORMP objectives under this alternative.

3.3.6.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The SSPS occurrence would be more protected and ensured continued ability to remain viable under this alternative, with only Alternative 5 providing a more rapid rate of recovery and significant progress toward meeting or continued meeting all standards and the ORMP objectives.

3.3.6.2.4.5 Wildlife and Special Status Animals

Alternative 4 would provide rest and/or deferment of grazing during the upland growing season from 2 to 3 years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 4 would provide rest and deferment of grazing during the hot season to prevent overuse and degradation 2 years in any consecutive 3-year period in pastures with riparian habitats. Under Alternative 4, upland and riparian habitats would have less pressure than any of the other grazing alternatives.

Upland habitat

Upland shrub steppe communities would improve to provide productive habitats for sage-grouse and other dependent species in the majority of the allotment. Without grazing pressure from livestock for an entire year, herbaceous understory conditions in the uplands would improve and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species.

Riparian habitat

In addition, riparian plants would grow to their potential, reproduce, and establish new plants within riparian habitats. This would result in larger, well-developed riparian areas that would provide increased succulent forage for sage-grouse, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Under Alternative 4, riparian habitats would make more rapid progress toward PFC than the other grazing alternatives.

Although pasture 2 would not receive rest, grazing in upland habitats would be deferred during the growing season similar to Alternative 3.

Sage-grouse

Under Alternative 4, sage-grouse habitat would improve in the same ways as described under Alternative 3, but improvement would occur more quickly and deep-rooted perennial grasses and forbs would be more robust and vigorous.

Under Alternative 4 allotment would continue to make progress toward meeting Standard 8.

3.3.6.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. Fewer cattle and new pasture use rotations and dates could lead to additional labor and feed costs. However, the income from selling cattle is not reduced as much in this alternative as it is in Alternative 3.

3.3.6.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.6.2.5 Alternative 5**3.3.6.2.5.1 Vegetation**

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. The allotment would continue to meet Standard 4 and the ORMP objective to improve vegetation health and condition.

3.3.6.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would allow the allotment to make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.6.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.6.2.5.4 Special Status Plants

This alternative would give the native plant community significant opportunity to make progress toward a healthy, vigorous habitat supporting plant diversity and creating quality SSPS habitats.

3.3.6.2.5.5 Wildlife and Special Status Animals

Under Alternative 5, upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would improve and continue to provide productive sage-grouse habitat, and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, well-developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, and redband trout. Terrestrial and aquatic wildlife habitat objectives would continue to make progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals).

3.3.6.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.6.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.7 Hart Creek Allotment

3.3.7.1 Hart Creek Allotment Affected Environment

3.3.7.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-23 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Hart Creek allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, are provided in Appendix E.

Table VEG-23: Ecological sites mapped for the Hart Creek allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	5,999
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	438
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	924
	SALINE BOTTOM 8-12 SAVE4/LECI4	black greasewood; basin wildrye	126
	¹ SAND 8-12 ARTRT/ACHY	basin big sagebrush; Indian ricegrass	253
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	834
	¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	11

	Ecological Site	Dominant Species Expected	BLM acres
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	28
Pasture 2	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	6,935
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	1,728
	SALINE BOTTOM 8-12 SAVE4/LECI4	black greasewood; basin wildrye	487
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	86
	¹ SILTY 7-10 KRLA2/ACHY	winterfat; Indian ricegrass-bottlebrush squirreltail	26
	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	43
Pasture 3	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	51
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	1,079
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1,692
	¹⁻² MAHOGANY SAVANNA 16- 22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	8
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	225
	¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	63
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	2,757
	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	834
	¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	105
	¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	8
	UNKNOWN/NO DATA		229
	Hart Creek total acres		24,968

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-23 above, the vegetation inventory for the Hart Creek allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact

Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-24 is a summary of ecological condition within the Hart Creek allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-24: Ecological condition for public lands in Hart Creek allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Hart Creek Allotment (0532)	75%	25%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE 1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Hart Creek allotment.

Additionally, current vegetation in the Hart Creek allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-25

Table VEG-25: Current vegetation in the Hart Creek allotment based on PNNL data, as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	31	0%
ASPEN	30	0%
BIG SAGE	8000	30%
BIG SAGE MIX	260	1%
BITTERBRUSH	6	0%
BUNCHGRASS	1,023	4%
CONIFER	12	0%
EXOTIC ANNUAL	742	3%
GREASEWOOD	644	2%
JUNIPER	722	3%
LOW SAGE	586	2%
MOUNTAIN BIG SAGE	1,202	5%
MOUNTAIN SHRUB	183	1%
RABBITBRUSH	59	0%
SALT DESERT SHRUB	12,257	46%
SEEDING	15	0%
SPARSE VEGETATION	700	3%

Vegetation Cover Type	Acres	Percent of Allotment
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	224	1%
UNKNOWN/NO DATA	0	0%
Total:	26,697	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-23 and VEGE-24. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, vegetation communities identified in PNNL data are consistent with those identified as reference site vegetation communities, with salt desert shrub and big sagebrush dominating. Limited acreage with encroachment by juniper has progressed to a phase where the sites are now dominated by this species, although would have limited presence as small inclusions within vegetation communities which, at potential, would support dominant big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory. The acreage dominated by invasive annuals is also limited. The acreage dominated by bunchgrass is within the variability of reference site conditions under natural disturbance regimes.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in pastures 1 and 2 of the Hart Creek allotment, but is met in pasture 3. Review of the 2006 Evaluation/Determination for Standard 4 and additional data and information available since its completion, including sage-grouse habitat assessments completed in 2012, does not lead to a change in the conclusion that the Standard is not met and that current livestock management practices are not significant factors. Current livestock management practices in pastures 1 and 2 include grazing of upland vegetation communities during no more than one in two years during the active growing season (May-June) and utilization that is consistently less than the Owyhee Resource Management Plan maximum allowable level of 50 percent. The causal factor for not meeting the standard in pastures 1 and 2 of the allotment is historic grazing practices that reduced the composition of deep-rooted perennial herbaceous species within the vegetation communities.

In not meeting Standard 4 within the allotment, the ORMP management objective to improve unsatisfactory vegetation health/condition on all areas is not met. While livestock management practices in pastures where the standard is not met conform to the Guidelines, appropriate livestock management practices can be implemented to allow progress toward meeting the ORMP vegetation management objective and attaining progress toward reference-site vegetation communities with a co-dominance of deep-rooted perennial bunchgrasses and shrubs. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhardt & Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequently as 2 of every 3 years or more often.

To summarize, Standard 4 is not met in pastures 1 and 2 of the Hart Creek allotment due to historic livestock management practices, but is met in pasture 3. Although current livestock management practices in pastures 1 and 2 include grazing of upland vegetation communities during no more than one in two

years during the active growing season (May-June) and utilization that is consistently less than the Owyhee Resource Management Plan maximum allowable level of 50 percent, the ORMP vegetation management objective to improve unsatisfactory vegetation health/condition in the Hart Creek allotment is not met with static to downward trend recorded.

3.3.7.1.2 Soils

Historic livestock grazing management practices are significant causal factors for not meeting watershed standards in pastures 1 and 2 of the Hart Creek allotment; pasture 3 is meeting. While soil stability is currently stabilized in a degraded state, hydrologic function is altered and primarily connected with past grazing practices.

Much of the decline in infiltration and runoff rates and patterns can be associated with a change of deep-rooted perennial bunchgrasses to more shallow-rooted species. The steady reduction of species diversity and the localized invasion of annuals have compromised soil nutrient replenishment and result in decreased watershed function due to a lack of ability for proper nutrient cycling, hydrologic cycling, and energy flow.

Declining ecological function and impaired soils indicate that soil and hydrologic function are compromised. Historic livestock grazing management is the cause for not meeting Standard 1 and the ORMP soil management objective of improving unsatisfactory watershed health/condition in the Hart Creek allotment.

3.3.7.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁶

Standards 2 and 3 are not being met in pastures 1 and 3 of the Hart Creek allotment. Two reaches of Hart Creek that traverses pasture 1 were rated FAR because they lacked the late-season flow necessary to fully support riparian graminoids, but woody riparian species occur along the reaches. Scotch thistle and whitetop, both Idaho noxious weed species, occur at some locations along Hart Creek. In 2008, the two reaches of Hart Creek were re-assessed FAR. There was lateral instability and the channel meandered and was braided. There were noxious weeds present, and the bank shearing was introducing sediment into the stream. The reach of Pickett Creek that occurs in pasture 1 supported appropriate woody riparian vegetation, but upland species such as Kentucky bluegrass dominated the understory; thus, it was rated FAR.

Brown's Creek, which traverses pasture 3, was rated FAR because there were not adequate hydric species to stabilize stream banks during high flow events. Also within pasture 3, approximately 2.2 miles of Buckaroo Creek, 0.9 mile of a tributary to Buckaroo Creek, 1.2 miles of Cat Creek, 1.1 miles of Little Brown's Creek, and 0.8 mile of a tributary to Little Browns Creek were also most recently rated FAR (see assessment table). Issues identified include inadequate soil moisture and lack of floodplain inundation to support hydric species that would protect the stream banks, a lack of plant composition and vigor, erosion was occurring, the stream was overwide, and the stream banks and channel were unstable.

¹⁶⁶ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Hart Creek (0532), Box T (0534), and Alder Creek FFR (0639) Allotments* document in the BLM Idaho Group 3 website or available from the Owyhee Field Office

Five known springs that occur in pasture 3 were assessed in 2003, 2005, and 2008; one was most recently in PFC, one was FAR, and three were NF. A rating lower than PFC for the springs was mostly associated with improperly placed or unmaintained exclosures. Three of the springs that were originally assessed in 2003 were re-assessed in 2008; Cat Spring was again rated FAR, Alibi Spring was NF (a downward trend), and the PFC protocol was not applied to Buckaroo Spring. However, photos were taken and the area appears to have been trampled and the vegetation was in poor health.

Table RIPN-20: Hart Creek allotment riparian condition

	Allotment & Pasture Stream Miles & Condition				
Stream Name	Hart Creek- 01	Hart Creek- 02	Hart Creek- 03	Assessment Issues/ Impacts Identified	Total Miles
Hart Creek	0.8 (PFC- 2001)				3.3
	0.5 (FARS- 2001/2008)			2001: overwide, braided & straightened channel/ presence of weeds 2008: weeds present/ overwide and straightened channel/ channel braided	
	2.0 (FARU- 2001/ 2008)			2001: channel meanders/ bank instability & erosion 2008: cut bank introducing sediment/ meandering channel	
Pickett Creek	1.0 FARS- 2001)			lack of plant composition/ areas of overwide channels/ areas of inadequate vigorous veg with stabilizing roots	1.0
Browns Creek		1.7 (PFC- 2000/2008)			3.8
			0.9 (FARS- 2000)	water emerges and submerges/ areas of under developed floodplain & overwide channels/ inadequate soil moisture to support veg with stabilizing plants that protect banks/ lateral instability	
			1.0 (FARU- 2001)	access points have overwide channels and unstable banks	
Buckaroo Creek			2.2 (FARS- 2000/2013)	inadequate soil moisture & plant composition to protect stream banks/ overwide channel	2.2

	Allotment & Pasture Stream Miles & Condition				
Stream Name	Hart Creek- 01	Hart Creek- 02	Hart Creek- 03	Assessment Issues/ Impacts Identified	Total Miles
Buckaroo Creek Trib			0.4 (FARS- 2000) 0.5 (FARU- 2000)	inadequate floodplain access & soil moisture/ lack of plants with stabilizing roots/ high erosion & deposition/ overwide channel	0.9
Cat Creek (Browns Creek Trib)			1.2 (FARS- 2000)	water gap present/ lack of soil moisture, plant composition, veg vigor, and deep-rooted plants to stabilize stream banks	1.2
Little Browns Creek			1.1 (FARU- 2001)	areas where floodplain is not inundated/ areas of inadequate soil moisture, plant composition, plant vigor, and veg to stabilize banks	1.1
Little Browns Creek Trib			0.8 (FARS- 2001)	extensive use by livestock/ streambanks eroded/ inadequate veg and vigor to stabilize banks	0.8

Springs Assessed, Condition, & Issues Identified				
Spring Name	Pasture	Assessme nt Year	PFC Condition	Assessment Issues/ Impacts Identified
Cat Spring	3	2003/2008	FAR/FAR	development in disrepair/maintenance required/ upland veg encroaching on remaining rip area inside enclosure
Alibi Spring	3	2003/2008	FAR/NF	non-functioning troughs/ inadequate soil moisture to support rip. Veg.
Unnamed Spring "5233HSB"	3	2003	NF	shrinking rip area/ altered flow patterns/ inadequate plant composition and vigor/ excessive sediment
Buckaroo Spring	3	2005/2008 /2013	PFC/NA/ PFC validation	
Unnamed Spring	3	2012	NF	greater than 50% bare soil/ excessive erosion

Standard 7 is not being met in the Hart Creek allotment. For IDEQ water quality information associated with the Hart Creek allotment, see table RIPN-3.

3.3.7.1.4 Special Status Plants

There are five special status plants that occur within the Hart Creek allotment: Earth lichen, King's eyelashgrass, white eatonella, white-margined wax plant, and stoutstem threadplant. The occurrences of these special status plants are meeting Standard 8. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006, and supplemented in 2013. Standards 1, 2, 3, 4, 7, and 8 of the applicable Standards for Rangeland Health are not being met in the Hart Creek allotment.

Specific species descriptions and habitat requirements can be found in Section 3.1.4 of this EA. Observations on grazing and trampling effects on these five SSPS in this allotment are lacking. It is unknown if these populations are extinct or if livestock are presently having any impacts on the plants or habitat. Earth lichen, Kings' eyelashgrass, and stoutstem threadplant are located in pasture 2, and white eatonella is in pasture 1. White-margined wax plant is located in both pastures in this allotment.

3.3.7.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Hart Creek allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013e).

The Hart Creek allotment consists of three pastures and contains two dominant habitat types: salt desert on the northern portions, and shrub steppe on the southern portions. The shrub steppe habitat is used by sage-grouse during the breeding, summer and winter seasons (IDFG, unpublished data). The salt desert portion of this pasture is not considered sage-grouse habitat.

Standard 8 is not met within the Hart Creek allotment and current livestock grazing management is a significant factor.

Table WDLF-7: Focal habitats that are present on the Hart Creek allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe Salt Desert	Limiting in pastures 1 and 2 Not Limiting in pasture 3	- Loss of deep-rooted perennial grasses and forbs - Slight encroachment of juniper in some areas of the allotment - Cheatgrass is common in some portions of the allotment.
Riparian habitats Hart Creek Pickett Creek Little Browns Creek Buckaroo Creek Cat Creek Springs	Limiting in pastures 1 and 3 Not limiting in pasture 2	- Inadequate riparian vegetation to protect stream banks - Erosion and bank alteration are occurring. - Over-wide channels - Braided channels - Redband trout are present in pasture 1. - Spotted frogs are not present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	- Insufficient deep-rooted perennial grass and forb canopy cover and height - Insufficient sagebrush height. - Decadent sagebrush - Cheatgrass is common.

3.3.7.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.7.1.7 Cultural Resources

There are 53 previously recorded cultural sites on BLM administered land within the Hart Creek allotment, and all but one are prehistoric lithic flake and tool scatters. The remaining site is a historic refuse scatter. Staff monitored 10OE2247, which is the only site determined to be within 100 meters of an identified livestock congregation area. The location is experiencing minor livestock trampling and has a trail of up to 6 centimeters deep at one area of lithic concentration, but the effects do not threaten the site's potential NRHP eligibility. BLM staff monitored two sites, 10OE3320 and 10OE3328, that are not within 100 meters of a congregation area to use as a basis of comparison with sites that are. There are no livestock-related disturbances at either location.

BLM and contract staff surveyed all seven of the identified potential livestock congregation areas and recorded two new cultural sites. Site 13-O-18-P007 is a prehistoric scatter of lithic flakes and stone tools that is experiencing light to moderate grazing-related effects. Trampling is less than 10 centimeters deep over approximately 10 percent of the site and trails affect approximately 5 percent of the surface area at 10 centimeters deep. A two track road crosses the site and has created a disturbance of over 10 centimeters deep. Livestock are not adversely affecting the site's potential eligibility for NRHP inclusion, however, it is recommended to relocate the portable water trough and the salting blocks found here to another area.

Site 13-O-18-P008 is a prehistoric lithic scatter located on a hillside. The site is crossed by two livestock trails that are approximately 10 to 12 centimeters deep and a primitive road. Natural erosion is causing lithic material to move downslope and it is having the greatest effect on the site. No cultural material appears in the trails. Because the site lacks potential for buried cultural deposits, it is recommended not eligible for the NRHP.

Staff visited the remaining five potential congregation areas and found only two of them to be actual livestock gathering locations. No new site recordings resulted from the surveys completed at these areas.

A monitoring visit to site 10OE2247 revealed that part of the site is within an enclosure, but a portion of the site remains outside of the fenced area. The area surrounding the enclosure is devoid of ground cover and erosion is occurring on a slope trending to a dry creek channel. There are three livestock trails of less than 10 centimeters deep crossing the site and a waterless trough is present. The disturbance from livestock is not having an adverse effect on the site currently due to the lack of an attractant. The site's eligibility has not been established and it is recommended that it be revisited for a formal evaluation. Mitigation or protection measures, if necessary, could be made by the field office based on the results of the eligibility determination. Sites 10OE3320 and 10OE3328 are not near a potential congregation area, but staff monitored the locations to assess their conditions. Neither site is experiencing any livestock-related effects.

3.3.7.2 Hart Creek Allotment Environmental Consequences

3.3.7.2.1 Alternative 1

3.3.7.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of the current permit with active authorized use remaining consistent with a voluntary reduction to 1,351 AUMs implemented since 1996. Standard 4 was not met in pastures 1 and 2

of the Hart Creek allotment due to historic livestock management practices, while Standard 4 was met in pasture 3. Although the current grazing schedule includes growing season grazing in one of each 2-year cycle in pastures 1 and 2 of the allotment, the alternate year has scheduled rest that allows an opportunity for the cool-season bunchgrass species to regain vigor. Although impacts to health and vigor of native perennial bunchgrasses, which are preferred forage plant species, would occur with alternate-year scheduled growing season use in each pasture of the allotment, continuation of the utilization levels in the light category recorded in recent years (See Appendix B) and rest in alternate years would provide opportunity for adequate recovery of health and vigor (Appendix E).

Under Alternative 1, progress toward meeting Standard 4 would not occur in pastures 1 and 2, given the current composition of vegetation that lacks significant components of the potential vegetation for these low elevation sites. Standard 4 would continue to be met in pasture 3 with its slightly higher elevation and components of the vegetation community providing biotic integrity. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although continued implementation of alternate year rest in pastures 1 and 2 would provide continued opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.7.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide little to no improvement to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts currently exist from historic grazing, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.7.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.7.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.7.1), the Hart Creek allotment would be available to grazing during the spring for one year, and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.9 miles of perennial streams, 81.3 miles of intermittent/ ephemeral streams, and four springs would be affected by the impacts associated with the spring season of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the spring months; therefore, the impacts of spring grazing would likely continue to be most prevalent under Alternative 1.

Under current management, the Hart Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons, and would have the same number of active AUMs, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.7.2.1.4 Special Status Plants

There are five SSPS in this allotment. Standards 1, 2, 3, 4, 7, and 8 of the applicable Standards for Rangeland Health are not being met in the Hart Creek allotment. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. It is for the above reasons that Alternative 1 will not maintain or improve the habitat for the SSPS. The resulting adverse effects on the special status plant site are habitat degradation and decreased population viability with little or no improvement to the habitat, as described above in Section 3.1.4 in the Environmental Consequences of Alternative 1 Common to All allotments (Section 3.2.) and

Common to All Grazing Alternatives (Section 3.2.4.1). The current management regime would allow for grazing in all pastures every year during summer and fall annually, with minimal rest or deferment. Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species.

3.3.7.2.1.5 Wildlife and Special Status Animals

Pastures 1 and 2

Under the current grazing system, pastures 1 and 2 are grazed every other year and that grazing occurs before the critical growing season for perennial grasses. Pasture 3 is grazed during the early part of the active growing season each year.

Upland habitat

Under this alternative, the same livestock management practices that resulted in the current conditions described in the Affected Environment would be allowed to continue and the current conditions and trends for wildlife habitat within upland habitats would continue. The year of rest every other year for pastures 1 and 2 would be expected to allow deep-rooted perennial grasses and forbs to recover vigor and reproductive capability, under most circumstances. However, there may not be a sufficient seed source in the salt desert habitat to allow perennial grasses to return to a co-dominant state with the shrubs. It is possible that historic grazing practices and invasive cheat grass have altered the uplands in pastures 1 and 2 to the extent that they no longer have the potential to regain the deep-rooted perennial grass component that used to occur.

The current grazing rotation would allow for reproduction and maintenance of vigor for deep-rooted perennial grasses and forbs in the shrub steppe habitat within the allotment. Pasture 3 is grazed every year during the early portion of the active growing season, but it is meeting Standard 4 and would be expected to maintain wildlife habitat within that pasture.

Riparian habitat

In pasture 1, riparian habitats would continue to have active erosion and inadequate hydric vegetation to stabilize stream banks. Habitats for riparian-dependent species would have limited cover and forage, which would reduce the survival and reproductive success of wildlife using these habitats. Riparian habitats in pasture 2 would continue to provide adequate cover and forage for wildlife.

Sage-grouse habitat

As identified in the affected environment, the sagebrush habitat in these pastures do not provide the necessary height and therefore cover from deep-rooted perennial grasses and perennial forbs to be productive sage-grouse breeding habitat (Connelly, Schroeder, Sands, & Braun, 2000). Cheatgrass is also common within this pasture. The deficiency in deep-rooted perennial grasses and forbs in the uplands of pasture 1 are likely a result of historical livestock management practices and invasive species. The sagebrush habitats on the Hart Creek allotment would continue to not provide productive breeding habitat for sage-grouse.

Under this alternative, pastures 1 and 2 would not make progress toward meeting Standard 8 in the upland or riparian habitats.

Pasture 3

Upland habitat

Upland habitats are currently meeting Standard 4 in this pasture, and under Alternative 1, this condition would continue. Perennial grasses and forbs would maintain vigor and provide necessary cover and forage for upland wildlife species.

Riparian habitat

Riparian habitats are not meeting Standards 2 or 3 in this pasture. Under Alternative 1, riparian habitat would continue to lack sufficient vegetation to stabilize stream banks and the vigor and extent of riparian habitats would remain limited. Reduced cover and forage result in reduced survival and reproduction of riparian dependent wildlife species.

Sage-grouse habitat

Sage-grouse habitat lacks the necessary forb canopy cover and is being invaded by cheatgrass. Additionally the reduced herbaceous vegetation in riparian habitats limits the forage base for early summer brood rearing. These vegetation conditions reduce the cover and forage for sage-grouse and reduce the success of nests and broods within this pasture. Under Alternative 1, these conditions would continue to occur.

Under Alternative 1, Hart Creek would not make progress toward meeting Standard 8.

3.3.7.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.7.2.1.7 Cultural Resources

None of the cultural sites within a 100-meter proximity of a livestock congregation area are experiencing adverse effects to their potential NRHP eligibility. Therefore, no known historic properties would be affected by this alternative.

3.3.7.2.2 Alternative 2

3.3.7.2.2.1 Vegetation

Under Alternative 2, the permittee applied to maintain active authorized use at 2,365 AUMs, an increase from the voluntary agreement in 1996. In addition, the application requested that the current grazing schedule for the 3-pasture allotment be maintained with alternate-year rest planned for pastures 1 and 2, while pasture 3 would be used annually from mid-April until early June. Standard 4 is not met in pastures 1 and 2 of the Hart Creek allotment due to historic livestock management practices, while Standard 4 is met in pasture 3. Although the current grazing schedule that would be continued under Alternative 2 includes growing-season grazing in one of each 2-year cycle in pastures 1 and 2 of the allotment, the alternate year has scheduled rest that allows limited opportunity for the cool-season bunchgrass species to regain vigor. In addition to impacts to health and vigor of native perennial bunchgrasses that would occur with alternate-year scheduled growing season use in each pastures 1 and 2 of the allotment, increased intensity of grazing use that would occur with the significantly greater number of cattle authorized under Alternative 1 compared to Alternative 2, as well as the larger number of cattle grazing within pasture 3 during the active growing season annually, would limit opportunity for adequate recovery of cool-season bunchgrass species health and vigor (Appendix E).

Under Alternative 2, progress toward meeting Standard 4 would not occur in pastures 1 and 2 due to the current composition of vegetation that lacks significant components of the potential vegetation for these low-elevation sites and frequent grazing use scheduled during the active growing season. In addition, the intensity of grazing use that would occur in excess of native bunchgrass species ability to recover health and vigor following active growing season grazing would further limit the potential to meet Standard 4. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.7.2.2.2 Soils

Alternative 2 for the Hart Creek allotment would provide 1 out of 2 years of deferment from spring grazing for pastures 1 and 2 and would not differ much from Alternative 1 from a seasonal perspective, but would impose an overall increase in livestock numbers and active AUMs. Physical impacts during the wettest period would continue and repetitive growing season use in pasture 3 would not increase the ability of native plant communities to remain healthy, vigorous, and productive during active growth, which could result in a decline in soil stability. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to the current condition (see Section 3.2.2.3).

3.3.7.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.7.2), the Hart Creek allotment would be available to grazing during the spring for one year and rested the second year of a 2-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.9 miles of perennial streams, 81.3 miles of intermittent/ ephemeral streams, and four springs would be affected by the impacts associated with the spring season of grazing. Recent reported actual use data (Appendix B) indicate that the allotment has primarily been used during the spring months, and the riparian Standards are not being met.

Under current management, the Hart Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Although the two pastures would be rested 1 in 2 years, the permittee's application requests a 74 percent increase in active AUMs compared to the current situation. Therefore, the allotment would continue to not meet the riparian-wetland Standards under this alternative.

3.3.7.2.2.4 Special Status Plants

This alternative would not provide opportunity to increase habitat quality for SSPS. As a whole, the allotment would not make progress toward improvement compared to Alternative 1, risking further declining conditions and possible impacts to SSPS.

3.3.7.2.2.5 Wildlife and Special Status Animals

The impacts under this alternative would be essentially the same as described in Alternative 1 but the active AUMs would be increased by 74 percent. Both upland and riparian habitats would receive increased pressure from livestock grazing. Pastures 1 and 2 would be grazed outside of the critical growing season for perennial grasses and riparian habitats and would receive complete rest every other year. However, since these pastures are not meeting Standard 8 under the current situation, doubling the number of active AUMs would not allow progress toward meeting Standard 8. Pasture 3 would be grazed during the active growing season every year, and upland, riparian, and sage-grouse habitats would have increased grazing pressure, and the vigor and reproductive capability of vegetation would decrease. Nesting and hiding cover and forage would decrease and nest and brood success would decrease in all habitats.

Since this pasture is not meeting Standard 8 under the current situation, increasing the number of livestock would not allow this pasture to progress toward meeting Standard 8.

3.3.7.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Additional AUMs and cattle and could lead to additional labor and feed costs. Additional cattle could bring in increased revenue from the sale of animals, however.

3.3.7.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.7.2.3 Alternative 3

3.3.7.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30. Additionally, a reduction in the number of cattle that graze within the allotment, with a corresponding allotment-wide stocking rate of approximately 15 acres per AUM compared to the current permit with the voluntary reduction in AUMs at approximately 12 acres per AUM, would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. Limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 1 in 3 years would allow cool-season bunchgrass species an opportunity to regain health and vigor, as detailed in Appendix E.

Under Alternative 3, progress toward meeting Standard 4 would not occur in pastures 1 and 2, given the current composition of vegetation that lacks significant components of the potential vegetation for these low elevation sites. Standard 4 would continue to be met in pasture 3, with its slightly higher elevation and components of the vegetation community providing biotic integrity. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although implementation of the Alternative 3 grazing schedule that provides rest in all pastures during one of each 3-year period would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.7.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing for all pastures and would increase the amount of use that pastures 1 and 2 previously received with a 2-year rotation under Alternative 1. As a result, the 3-year rotation would remove 2 extra rest years over the life of the permit for both pastures. While AUMs and stocking rates would be lowered, the expected benefits from a reduction in livestock numbers may not be adequate to offset less rest. Pasture 3 would benefit due to 1 out of 3 years of deferment from spring grazing and critical growing season use and receive a decrease in livestock numbers, active AUMs, and a reduction in stocking rates that would lessen physical impacts to soils during the wettest period of the year. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 would occur for pasture 3 but not for pastures 1 and 2. Consequently, the allotment would not move toward improving watershed health with Alternative 3 when compared to Alternative 1 (see Section 3.2.2.4).

3.3.7.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.7.3), the Hart Creek allotment would be available to grazing during the spring for 2 years and rested the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.9 miles of perennial streams, 81.3 miles of intermittent/ ephemeral streams, and four springs would be affected by the impacts associated with the spring season of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the spring months, and the riparian Standards are not being met.

Under current management, the Hart Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Although the seasons of use would not change significantly compared to the current situation (Alternative 1), the pastures would be managed under a defined 3-year grazing schedule

that incorporates 2 years of riparian area deferment and 1 year of rest. The allotment would be rested from use during the riparian area constraint period all years. Additionally, the alternative proposes a 23 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.7.2.3.4 Special Status Plants

Grazing permits would be renewed with actions that provide yearly deferment from spring grazing and would move this allotment to progress toward meeting or continuing to meet standards and ORMP objects. This allotment would ensure that native plant communities remain stable and healthy. With the decrease in AUMs, Alternative 3 is expected to be better for SSPS compared to Alternatives 1 and 2 however, not as beneficial as Alternatives 4 or 5 because of the adjusted start date 2 weeks earlier in the season.

3.3.7.2.3.5 Wildlife and Special Status Animals

Active AUM's would be reduced by 23% compared to Alternative 1 which would reduce grazing intensity.

Pastures 1 and 2

Under this alternative, pastures 1 and 2 would be grazed between March 1 and April 20 every other year. These pastures would not be grazed during the critical growing seasons for upland or riparian habitats and would receive complete rest every other year.

Upland habitat

Existing deep-rooted perennial grasses and forbs would be able to complete their growth and reproductive cycles without disturbance from livestock every year and would be more lightly grazed in the spring every other year. They would increase in vigor and become taller and more robust plants. This would increase cover and forage which would increase reproductive success and survival of shrub steppe dependent wildlife species. There may not be sufficient deep-rooted perennial grasses present to act as a seed source for reestablishing the bunch grass component of the upland salt desert or low elevation shrub steppe habitats in pastures 1 and 2.

Riparian habitat

With reduced grazing pressure, no grazing during the hot season, and complete rest every other year, riparian habitats would increase vigor, grow, and establish new plants. This would stabilize stream banks and increase cover and forage for wildlife species. Erosion and sedimentation would decrease and shading would increase which would provide cooler water temperatures and less sediment in redds for redband trout. This would increase survival of young and adult redband trout and other aquatic species.

Sage-grouse habitat

Deep-rooted perennial grasses and forbs would increase in height and abundance. Cover and forage for sage-grouse would increase which would increase nest and brood survival. Residual grass height would increase as grazing intensity decreases which would increase nest cover early in the nesting season and make nests less visible to predators. Cheatgrass would remain common and continue to compete with native perennial grasses and forbs but not provide adequate cover or forage for sage-grouse.

Under this alternative, pastures 1 and 2 would progress toward meeting Standard 8

Pasture 3

Under this alternative, pasture 3 would be grazed between April 21 and June 1 in 2 of 3 years and the total AUMs would be reduced by about 300 AUMs. In the third year, pasture 3 would receive complete rest from grazing.

Upland habitat

The upland habitats are currently meeting Standard 8 and providing productive sage-grouse habitat. Reducing the stocking rate and resting this pasture in 1 of 3 years would provide for increased vigor and reproductive capability of perennial grasses and forbs. The upland portions of pasture 3 would continue to meet Standard 8.

Riparian habitat

Under this alternative, the riparian habitats in pasture 3 would also receive reduced grazing pressure during the growing season from the lower stocking rate. Additionally riparian habitats would be rested completely 1 year in 3. This would allow riparian plants to pass undisturbed through their yearly growth and reproductive process 1 of 3 years. Riparian habitats would increase in extent and complexity, which would provide increased vegetative cover and forage for riparian-dependent species.

Sage-grouse habitat

Deep-rooted perennial grasses and forbs would increase in height and abundance. Cover and forage for sage-grouse would increase, which would increase nest and brood survival. Forbs in riparian habitats would increase and provide an increased forage base for sage-grouse during the summer brooding season. Residual grass height would increase as grazing intensity decreases which would increase nest cover early in the nesting season and make nests less visible to predators.

Reduced grazing pressure and complete rest 1 year in 3 would allow pasture 3 to make progress toward meeting Standard 8.

3.3.7.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer AUMs and cattle and new pasture use rotations and dates could lead to additional labor and feed costs. Reduced cattle could bring in less revenue from the sale of animals.

3.3.7.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.7.2.4 Alternative 4

3.3.7.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 2 of 3 years, resulting in year-long rest 2 of each 3 years. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment, with a stocking rate of approximately 12 acres per AUM. This compares to the current permit with 12 acres per AUM allotment-wide, excluding pastures that are rested. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 2 in 3 years, resulting in rest, would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Under Alternative 3, progress toward meeting Standard 4 would not occur in pastures 1 and 2, given the current composition of vegetation that lacks significant components of the potential vegetation for these low-elevation sites. Standard 4 would continue to be met in pasture 3, with its slightly higher elevation and components of the vegetation community providing biotic integrity. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although implementation of the Alternative 4 grazing schedule that provides rest in all pastures during 2 of each 3 years would provide greater opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.7.2.4.2 Soils

Alternative 4 would provide a minimum of 2 out of 3 years of rest from spring grazing for all three pastures that would reduce physical impacts to soils during the wettest and most susceptible period. While seasons would be expanded in pastures 1 and 2, limited critical growing season grazing in 2 out of 3 years in all three pastures would promote the ability of native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and lessens susceptibility to accelerated erosion. Subsequently, livestock numbers, active AUMs, and stocking rates would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants.

However, progress toward meeting Standard 1 is limited because of altered hydrologic function from the current lack of potential vegetation and localized invasion of annuals in these low elevation sites. As a whole, Alternative 4 would not make progress toward improving soil and hydrologic function though the reduced spring season use and grazing intensity would provide greater benefits for upland soils and watershed health compared to Alternatives 1, 2, and 3 (see Section 3.2.2.5).

3.3.7.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.7.4), the Hart Creek allotment would be available to grazing during the spring for one year and rested the second and third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.9 miles of perennial streams, 81.3 miles of intermittent/ ephemeral streams, and four springs would be affected by the impacts associated with the spring season of grazing 1 in 3 years. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the spring months, and the riparian Standards are not being met.

Under current management, the Hart Creek allotment is not meeting the Standards associated with the riparian-wetland resources. The pastures would be managed under a defined 3-year grazing schedule that incorporates one year of riparian area deferment as well as two years of rest. The allotment would be rested from the impacts associated with grazing during the riparian area constraint period all years, and would be used four of 10 years during the spring compared to five of 10 years that have occurred under the current situation. Additionally, the changes in season of use would result in a 56 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would meet the riparian-wetland Standards and the ORMP objectives under this alternative.

3.3.7.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The SSPS occurrence would be more protected and ensured continued improvement or maintained viability under this alternative, with only Alternative 5 providing a more rapid rate of recovery and significant progress toward meeting, or continue meeting all standards and the ORMP objectives.

3.3.7.2.4.5 Wildlife and Special Status Animals

The active AUM's would be reduced by 56% compared to Alternative 1.

Pastures 1 and 2

Under this alternative, pastures 1 and 2 would be grazed between April 1 and June 15 one year in three and would receive complete rest two years in three. This would result in lower grazing intensity and provide for increased rest for this pasture when compared to the current situation. This alternative would upland and riparian habitats to grow, reproduce, and establish without disturbance from livestock 2 of 3 years.

Upland habitat

Perennial grasses and forbs would increase in abundance and vigor and therefore increase cover for hiding, nesting, and foraging habitats. With significantly lower grazing intensity and deferment during the active growing season 1 in 3 years the upland vegetation would be able to grow, reproduce and approach its potential. There may not be sufficient deep-rooted perennial grasses present to act as a seed source for reestablishing the bunch grass component of the upland salt desert or low elevation shrub steppe habitats in pastures 1 and 2.

Riparian habitat

Woody and herbaceous vegetation would increase in vigor and reproductive capability. Seedlings would successfully establish, stabilize stream banks, and increase cover and forage for riparian dependent wildlife species. Riparian habitat would expand to its potential and provide improved habitat for redband trout and other riparian dependent species such as sage-grouse and migratory birds. Braided and over wide channels would narrow as riparian vegetation expands which would increase water depth and provide more complex aquatic habitats. Erosion and sedimentation would decrease and shading would increase which would provide cooler water temperatures and less sediment in redds for redband trout. This would increase survival of young and adult redband trout and other aquatic species.

Sage-grouse habitat

Increased canopy cover and height of deep-rooted perennial grasses and forbs would increase hiding, nesting, and escape cover and forage for sage-grouse which would increase nesting and brood rearing success. Residual grass height would increase as grazing intensity decreases which would increase nest cover early in the nesting season and make nests less visible to predators. Cheatgrass would remain common and continue to compete with native perennial grasses and forbs but not provide adequate cover or forage for sage-grouse.

Pasture 3

Under this alternative, pasture 3 would be grazed between April 1 and June 15 one year in three and would receive complete rest two years in three. This would result in lower grazing intensity and provide for increased rest for this pasture when compared to the current situation.

Upland habitat

This alternative would allow upland vegetation to grow, reproduce, and establish without disturbance from livestock 2 of 3 years. This would allow perennial grasses and forbs to increase in abundance and vigor and maintain the necessary cover and forage for upland wildlife species.

Riparian habitat

This alternative would allow riparian habitats to grow, reproduce, and establish without disturbance from livestock 2 of 3 years. Riparian habitat would be able to expand to its potential and provide improved habitat for riparian dependent species such as sage-grouse and migratory birds.

Sage-grouse habitat

Perennial grasses and forbs would increase in abundance and vigor and maintain the desired amount of cover and height that are desired for productive sage-grouse habitat. Residual grass height would increase as grazing intensity decreases which would increase nest cover early in the nesting season and make nests less visible to predators.

Under Alternative 4, this allotment would make progress toward meeting Standard 8.

3.3.7.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. Fewer AUMs and cattle, new pasture use rotations, and an additional year of required rest could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.7.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.7.2.5 Alternative 5

3.3.7.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Although grazing impacts would be removed for 10 years, progress would not be made toward meeting Standard 4 or the ORMP objective to improve vegetation health and condition due to the limited remaining components of the potential vegetation communities.

3.3.7.2.5.2 Soils

The implementation of this alternative would continue to not make progress toward meeting Standard 1 because of altered hydrologic function from the current lack of potential vegetation and localized invasion of annuals in these low elevation. Additionally, the ORMP objective to maintain or improve watershed health and condition would not be achievable. While Alternative 5 would provide the most benefits when compared to all alternatives, the allotment would not progress toward meeting standard 1 with livestock grazing not being a significant factor.

3.3.7.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.7.2.5.4 Special Status Plants

This alternative would give the native plant community significant benefit to make progress toward a healthy, vigorous habitat supporting plant diversity and creating quality SSPS habitats.

3.3.7.2.5.5 Wildlife and Special Status Animals

Under this alternative, both riparian and upland habitats in all three pastures would be rested from grazing completely for 10 years. This would allow bunchgrasses and perennial forbs to reproduce and establish and improve the quality of sage-grouse habitat by increasing the canopy cover of tall perennial grasses and perennial forbs. This alternative would remove livestock as a competitor within the ecosystem and wildlife habitat would improve. Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. If portions of the uplands within pastures

1 and 2 have crossed a threshold due to past grazing practices and invasive species then these area may not be capable of regaining the perennial grasses and forbs that should be part of the plant community. If a threshold has been crossed then uplands in pastures 1 and 2 would not make progress toward meeting Standard 8. Riparian habitats in all pastures and upland habitats in pasture 3 would make progress toward meeting Standard 8.

3.3.7.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.7.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.8 Josephine FFR Allotment

3.3.8.1 Josephine FFR Allotment Affected Environment

3.3.8.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-26 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Josephine FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, are provided in Appendix E.

Table VEG-26: Ecological sites mapped for the Josephine FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy-meadow sedges	trace
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	242
¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	84
UNKNOWN/NO DATA		20
Josephine FFR total acres		346

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-26 above, the vegetation inventory for the Josephine FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The

similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-27 is a summary of ecological condition within the Josephine FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-27: Ecological condition for public lands in Josephine Creek FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Josephine FFR allotment (0458)	15%	85%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Josephine FFR allotment.

Additionally, current vegetation in the Josephine FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-28.

Table VEG-28: Current vegetation in the Josephine FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	26	1%
BIG SAGE	11	0%
BIG SAGE MIX	0	0%
BITTERBRUSH	27	1%
BUNCHGRASS	38	1%
CONIFER	0	0%
EXOTIC ANNUAL	16	1%
GREASEWOOD	0	0%
JUNIPER	1,039	36%
LOW SAGE	677	24%
MOUNTAIN BIG SAGE	374	13%
MOUNTAIN SHRUB	462	16%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%

Vegetation Cover Type	Acres	Percent of Allotment
WATER	0	0%
WET MEADOW	198	7%
UNKNOWN/NO DATA	0	0%
Total:	2,868	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-26 and VEGE-27. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Josephine FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances resulting in a limited acreage dominated by exotic annual species are evident when comparing the two tables. The limited acreage of vegetation dominated by bunchgrass is within the variability of reference site conditions.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not being met in the Josephine Creek FFR allotment. One RHA was completed in the Josephine Creek FFR allotment during 2001 and concluded that the biotic integrity of the site was rated as a none-to-slight departure from reference site conditions. The indicator for invasive plants did not identify the presence of juniper, although juniper was identified as the dominant species on site on the Species Abundance Worksheet (Based on Cover). In addition, the 2006 Initial Allotment Review stated under Native Plant Communities (Standard 4), “Juniper encroachment in this allotment and the adjacent lands is extreme.” As noted from photos accompanying the 2001 assessment and 2011 NAIP imagery (USDA FSA, 2011), juniper dominates most public land portions of the allotment. Ecological site descriptions for the Loamy 13-16” ARTRV/PSSP-FEID and Very Shallow Stony Loam 10-14” ARAR8/POSE-PSSPS sites identify juniper as an invasive species that, when dominant, results in a new state requiring management inputs to restore ecological function of the reference site sagebrush/bunchgrass state. Juniper dominance of the public land portions of the allotment leads to a finding that Standard 4 is not being met due to altered fire regimes and subsequent juniper encroachment.

To summarize, the Josephine FFR allotment is not meeting Standard 4 because juniper encroachment into vegetation communities that should not include juniper, in excess of a few scattered trees, has occurred due to altered fire regimes. Juniper is competing with native perennial shrub, bunchgrass, and forb species. Fire frequency that is altered from natural disturbance regimes contribute to conditions that lead to a failure to meet the standard due to juniper encroachment. No data for trend are available, so no conclusion can be made as to whether the ORMP vegetation objective to improve unsatisfactory vegetation health/condition in the Josephine FFR allotment is met.

3.3.8.1.2 Soils

Watershed indicators show very little departure from expected conditions, leading to the conclusion that the Josephine FFR allotment is meeting Standard 1. Although the allotment is labeled to be at risk for juniper encroachment that can alter soil stability and hydrologic function over time, the existing plant community and soil conditions are adequate to provide for proper nutrient and hydrologic cycling and

energy flow. Current livestock management is compatible with attainment of Standard 1 for the Josephine FFR allotment.

3.3.8.1.3 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV, and other habitat disturbance or degradation.

3.3.8.1.4 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Josephine Creek FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013h).

Standard 8 for wildlife is not being met in the Josephine FFR allotment, primarily due to the conversion of shrub steppe habitat types to woodland/forest habitat types. The increase in woodland habitats in ecological sites where juniper is considered an invasive species and a minor habitat component, at most, comes at the expense of shrub steppe habitats, which are the reference state plant communities and condition for the ecological sites that predominate within the allotment. Although an increase in juniper woodlands in the allotment provides novel habitat for special status species such as flammulated owl, Lewis' woodpecker, and Williamson's sapsucker, a loss of shrub steppe vegetation communities results in a deficiency of adequate habitat for sagebrush-obligate and shrub-dependent special status wildlife species including sage-grouse, pygmy rabbit, Brewer's sparrow, sage sparrow, and loggerhead shrike.

Less than 0.1 miles of Josephine Creek pass through public land within this allotment. Josephine Creek is known to contain both redband trout and Columbia spotted frog. This portion of Josephine Creek is at the tail end of a reservoir created on private land. It is unclear what quality of habitat this reservoir provides for redband trout, Columbia spotted frog, or migratory birds.

Table WDLF-8: Focal habitats that are present on the Hart Creek allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Juniper encroachment
Riparian habitats Josephine Creek	Unknown	- No Data
Sage-grouse	Not Applicable	- Too much juniper present - Not preliminary priority habitat

3.3.8.1.5 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.8.1.6 Cultural Resources

There are no cultural sites recorded on BLM administered land in the Josephine FFR allotment and there are no potential livestock congregation areas identified either. Consequently, BLM staff made no monitoring visits and conducted no new surveys.

3.3.8.2 Josephine FFR Allotment Environmental Consequences

3.3.8.2.1 *Alternative 1*

3.3.8.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment varying times during the year, including the active growing season, for cool-season bunchgrass species. It is assumed that this variable season of use would be continued. Impacts to cool-season bunchgrass species from periodic active growing season use would continue to limit health and vigor of bunchgrass species and forbs, as detailed in Appendix E. Although Standard 4 is not met, current livestock management practices were not identified as a causal factor.

On land within the allotment that includes significant private land ownership (no more than 12 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the continuation of current livestock management practices, as they relate to the intensity of use, would not additionally impact vegetation resources.

Although the allotment would continue to fail to meet Standard 4 due to altered fire regimes and subsequent juniper encroachment, action that would be implemented under Alternative 1 would not contribute to the failure to meet the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.8.2.1.2 Soils

Under Alternative 1, the Josephine FFR allotment would meet Standard 1 and ORMP objectives and continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. The allotment is considered to be at risk due to invasive species, especially juniper, which has the tendency to alter soil infiltration and water holding capacity over time. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.8.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.8.2.1.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.8.2.1.4 Wildlife and Special Status Animals

Under Alternative 1, the livestock management (timing and intensity of use) would be at the discretion of the private land owner. The soils and plant communities on public land appear to be in good condition, with a none-to-slight departure from expected conditions except for the presence and abundance of juniper. Based on aerial photos from 2011 juniper encroachment into the Josephine Creek FFR allotment is severe. Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Cover and forage for shrub steppe dependent wildlife species would decrease as juniper continues to increase and out-competes shrubs, grasses, and forbs. Cover and forage for woodland-dependent wildlife species would increase.

Under Alternative 1, public land within the Josephine Creek FFR allotment would not make progress toward meeting Standard 8.

3.3.8.2.1.5 Social and Economic Values

See Section 3.2.8.2 above.

3.3.8.2.1.6 Cultural Resources

Due to the absence of any recorded cultural sites in the allotment and based on the current available data, it is determined that no known historic properties would be affected by this alternative.

3.3.8.2.2 *Alternative 2*

3.3.8.2.2.1 Vegetation

Livestock management actions, as defined by terms and conditions, do not differ between Alternatives 1 and 2, other than the inclusion of intensity of use limitations within riparian areas. These actions would not change impacts to upland vegetation resources.

Although the season of use identified under Alternative 2 is December 1-31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment varying times during the year, including the active growing season, for cool-season bunchgrass species. It is assumed that this variable season of use would be continued. Impacts to cool-season bunchgrass species from periodic active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met, current livestock management practices were not identified as a causal factor.

On land within the allotment that includes significant private land ownership (no more than 12 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the continuation of current livestock management practices, as they relate to the intensity of use, would not additionally impact vegetation resources.

Although the allotment would continue to fail to meet Standard 4 due to altered fire regimes and subsequent juniper encroachment, actions that would be implemented under Alternative 2 would not contribute to failure meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.8.2.2.2 Soils

Under Alternative 2, livestock grazing in the Josephine FFR allotment would occur year-round at the discretion of the permittee and would be similar to Alternative 1. In the absence of a defined grazing schedule, physical impacts during the wettest and most susceptible period are possible, while repetitive growing-season use would not increase the ability of native plant communities to provide for soil stability. However, all pastures of the allotment are currently meeting the standard with likelihood to continue to meet standards and to maintain watershed health. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water-holding capacity over time, due to the spread of juniper. As a whole, the allotment is expected to maintain soil and hydrologic function with Alternative 2, compared to Alternative 1 (see Section 3.2.2.3).

3.3.8.2.2.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.8.2.2.4 Wildlife and Special Status Animals

Alternative 2 is identical to Alternative 1 in its livestock management and in the effects to public land within the allotment. Under Alternative 2, public land within the Josephine Creek FFR allotment would not make progress toward meeting Standard 8.

3.3.8.2.2.5 Social and Economic Values

See Section 3.2.8.3 above. There would be no impacts relative to Alternative 1 because this alternative is the same as Alternative 1.

3.3.8.2.2.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.8.2.3 Alternative 3

3.3.8.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season, when grazing is authorized between 5/1 and 7/15. In combination, limits to the intensity of grazing use during the active growing season and exclusion of use during the active growing season 1 in 3 years would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Although the allotment would continue to fail to meet Standard 4 due to altered fire regimes and subsequent juniper encroachment, livestock management action that would be implemented under Alternative 3 would not contribute to the failure to meet the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.8.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period and allow additional benefits from deferment from critical growing season use over the same timeframe. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Alternative 3 also defines grazing periods and would not leave the season of use open although livestock numbers would continue to be at the permittee's discretion. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.8.2.3.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.8.2.3.4 Wildlife and Special Status Animals

Upland habitat

Under Alternative 3, a grazing plan would be implemented that provides active growing-season deferment for upland vegetation 1 of 3 years. This would reduce the grazing pressure on upland habitats and would allow plants in these habitats to grow, reproduce, and establish within upland communities. However, the continued encroachment of juniper on upland and riparian habitats could limit the ability of perennial grasses, shrubs, and forbs from establishing, and over time could result in reduced herbaceous and shrub cover in the upland and riparian habitats. Reduced grass and forb cover in the upland would reduce the quality of shrub steppe-dependent species habitat within the allotment. Reduced cover in riparian habitats would result in less complex habitat and less shading, which would limit the quality of riparian habitats for dependent species.

Under Alternative 3, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Cover and forage for shrub steppe-dependent wildlife species would decrease as juniper continues to increase and out-competes shrubs, grasses, and forbs. Cover and forage for woodland-dependent wildlife species would increase.

Riparian habitat

Under Alternative 3, a grazing plan would be implemented that provides hot-season deferment for riparian habitats 1 of 3 years. This would reduce the grazing pressure on riparian habitats and would allow plants in these habitats to grow, reproduce, and establish within riparian communities. However the continued encroachment of juniper on upland and riparian habitats could limit the ability of perennial grasses, shrubs, and forbs from establishing, and over time could result in reduced herbaceous and woody riparian vegetation. Reduced cover in riparian habitats would result in less complex habitat and less shading, which would limit the quality of riparian habitats for dependent species.

Under Alternative 3, public land within the Josephine Creek FFR allotment would not make progress toward meeting Standard 8.

3.3.8.2.3.5 Social and Economic Values

See Section 3.2.8.4 above. Fewer cattle and new pasture use dates each year of a 3-year cycle could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.8.2.3.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.8.2.4 Alternative 4

3.3.8.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. Although the number of active use AUMs authorized in the allotment would be increased, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 10 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.8.4). Limits to the season of grazing use and the stocking rate, prorated to the public land portion of the allotment, would allow cool-season bunchgrass species to regain health and vigor, as detailed in Appendix E. Although the allotment would continue to fail to meet Standard 4 due to altered fire regimes and subsequent juniper encroachment, livestock management action that would be implemented under Alternative 4 would not contribute to failure in meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.8.2.4.2 Soils

Alternative 4 would provide 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use that provides native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion.

Alternative 4 also delineates grazing periods, would not leave the season of use at the permittee's discretion, and more clearly defines the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers.

However, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.8.2.4.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.8.2.4.4 Wildlife and Special Status Animals

Under Alternative 4, a grazing plan would be implemented that provides active growing season deferment for upland vegetation 2 of 3 years. However, Alternative 4 allows grazing in riparian habitats during the hot season every year. This would reduce the grazing pressure on upland habitats and would allow plants in these habitats to grow, reproduce, and establish, but the continued encroachment of juniper on upland and riparian habitats could limit the ability of perennial grasses, shrubs and forbs to establish, and over time could result in reduced herbaceous and shrub cover in the upland and riparian habitats. Reduced grass and forb cover in the upland would reduce the quality shrub steppe-dependent species habitat within the allotment. Grazing riparian habitats every year during the hot season would allow for livestock to loaf in riparian habitats and reduce herbaceous and woody cover. Reduced cover in riparian habitats would result in less complex habitat and less shading which would limit the quality of riparian habitats for dependent species such as Columbia spotted frog, redband trout, and migratory birds.

Under Alternative 4, grazing practices would not impede juniper encroachment, and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Cover and forage for shrub steppe dependent wildlife species would decrease as juniper continues to increase and out-competes shrubs, grasses, and forbs. Cover and forage for woodland dependent wildlife species would increase.

Under Alternative 4, public land within the Josephine Creek FFR allotment would not make progress toward meeting Standard 8.

3.3.8.2.4.5 Social and Economic Values

See Section 3.2.8.5 above. Fewer cattle and new pasture use dates each year of a 3-year cycle could lead to additional labor and feed costs. The impacts from an increased number of cattle could vary by year, but generally, more cattle could require more management and feed but could also bring in more revenue from the sale of animals.

3.3.8.2.4.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.8.2.5 Alternative 5

3.3.8.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.8.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.8.2.5.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.8.2.5.4 Wildlife and Special Status Animals

Under Alternative 5 both riparian and upland habitats would be rested from grazing completely for 10 years. Juniper encroachment would continue in the uplands and would eventually decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, more well developed riparian areas that provide improved habitat for riparian dependent species. Under this alternative, the riparian habitats would make progress toward meeting Standard 8.

Under Alternative 5, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013).

Overall, under Alternative 5, public land within the Josephine Creek FFR allotment would not make progress toward meeting Standard 8.

3.3.8.2.5.5 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.8.2.5.6 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.9 Lone Tree Allotment

3.3.9.1 Lone Tree Allotment Affected Environment

3.3.9.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-29 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Lone Tree allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-29: Ecological sites mapped for the Lone Tree allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	1
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	1,920
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	2,336
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	254
	UNKNOWN/NO DATA		397
Pasture 3	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	604
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	73
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	49
	UNKNOWN/NO DATA		24
Pasture 4	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	170
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	134
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	trace
	UNKNOWN/NO DATA		211
Pasture 5	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	309
	¹⁻² VERY SHALLOW STONY	low sagebrush;	1

	Ecological Site	Dominant Species Expected	BLM acres
	LOAM 10-14 ARAR8/POSE-PSSPS	Sandberg bluegrass- bluebunch wheatgrass	
	UNKNOWN/NO DATA		31
Pasture 6	^{1,2} LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	432
	^{1,2} VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	101
	UNKNOWN/NO DATA		84
	Lone Tree total acres		7,131

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-29 above, the vegetation inventory for the Lone Tree allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-30 is a summary of ecological condition within the Lone Tree allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-30: Ecological condition for public lands in Lone Tree allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Lone Tree Allotment (0587)	35%	65%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Lone Tree allotment.

Additionally, current vegetation in the Lone Tree allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-31.

Table VEG-31: Current vegetation in the Lone Tree allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	2	0%
ASPEN	33	0%
BIG SAGE	83	1%
BIG SAGE MIX	2	0%
BITTERBRUSH	13	0%
BUNCHGRASS	391	3%
CONIFER	9	0%
EXOTIC ANNUAL	4	0%
GREASEWOOD	0	0%
JUNIPER	6,093	39%
LOW SAGE	2,945	19%
MOUNTAIN BIG SAGE	3,300	21%
MOUNTAIN SHRUB	2,450	16%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	210	1%
UNKNOWN/NO DATA	2	0%
Total:	15,536	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-30 and VEGE-31. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Lone Tree allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, bunchgrass communities lacking a significant shrub component are consistent with natural disturbance regimes and the variability in communities present in reference site conditions.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in all pastures of the Lone Tree allotment due to current livestock management practices and juniper encroachment into sagebrush steppe vegetation communities. Western juniper was recorded as an invasive species in all pastures of the Lone Tree allotment, with a moderate or greater departure from reference site conditions in all rangeland health assessments within the allotment. The dominance of juniper is greater than identified at reference site conditions, as an inclusion in small locations with shallow soils. Indicators of biotic integrity, other than the indicator for invasive species where juniper

dominance was noted, were documented in the 2006 evaluation as within the range of anticipated deviation. Competition with juniper has reduced the composition of shrubs and herbaceous species below reference site conditions, although these understory species retain vigor. Juniper dominance is a result of altered fire regimes and, to a lesser extent, historic livestock grazing practices that reduced fuels.

At the same time, a number of information sources indicate that the Owyhee Resource Management Plan management objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has not been met with current livestock management practices. Those sources include the vegetation ecological site inventory data, as updated in the 1999 Owyhee Resource Management Plan, that indicate the need for improvement from 35 percent early seral condition and 65 percent mid-seral condition; native perennial bunchgrass trend data between 2005 and 2011 at the one permanent trend plot in pasture 1 that identifies static trend; and notes at many rangeland health assessment sites in pastures 1, 3, and 4 identifying vegetation composition dominated by shallow-rooted grasses, inconsistent with reference site conditions.

Annual grazing use of pastures 1 and 2 (pasture 2 is combined with pasture 1; Josephine Creek and its associated canyon do not provide a barrier to livestock movement) during the active growing season for upland native perennial herbaceous species (May-June) and frequent grazing use in pasture 3 late in this same active growing season lead to a conclusion that current livestock management practices are also contributing to the failure to meet Standard 4. In addition, annual grazing during the active growing season for upland perennial species is not consistent with the Owyhee Resource Management Plan vegetation management actions and allocations which identify that grazing practices will be implemented that improve or maintain native rangeland species to attain composition, density, foliar cover, and vigor appropriate to site potential. The Owyhee Resource Management Plan vegetation management objective is not met in pastures 1-4. While data support a finding that current livestock management practices do not impair meeting the Owyhee Resource Management Plan management objective in pastures 5 and 6 for improvement/maintenance of native herbaceous and shrub vegetation communities, juniper encroachment in these same pastures leads to an overall conclusion that the Owyhee Resource Management Plan vegetation management objective is not met.

To summarize, the Lone Tree allotment is not meeting Standard 4 due to current livestock management practices and because juniper encroachment into vegetation communities that should not include juniper (in excess of a few scattered trees) is competing with native perennial shrub, bunchgrass, and forb species. Fire frequency that is altered from natural disturbance regimes contribute to conditions that lead to juniper encroachment. At the same time, annual grazing use during the active growing season has limited meeting the ORMP vegetation objective to improve unsatisfactory health/condition.

3.3.9.1.2 Soils

Standard 1 is not met in pasture 1 (former pasture 2) and 3 due to juniper encroachment and historic livestock management; pastures 4, 5, and 6 are meeting but are at risk for a decline in soil stability and hydrologic function due to juniper. While all pastures have been physically impaired by past grazing impacts, soils are stabilizing based on developing biological crusts over historic erosion relics, and little to no indication of current mechanical impacts.

Soil stability and hydrologic function, and nutrient availability, however, are impaired where western juniper encroachment and dominance is not part of site potential. Because overall watershed conditions are closely tied to the health of the biotic community, the current imbalance of vegetation composition identified for upland vegetation is a concern.

The encroachment of western juniper in all pastures is negatively affecting soil stability due to reductions in infiltration capacity from displacement of sagebrush and deep-rooted perennial bunchgrasses. The subsequent runoff results in sheet erosion and rilling, with greatest disturbances and reductions in infiltration capacity observed in pastures 1 and 3; pastures 4, 5, and 6 currently display little to no departure for soil and hydrologic indicators but are considered to be at risk.

The decreased ecological function and impaired soils indicate that soil and hydrologic function are compromised in pastures 1 and 3. Juniper encroachment and historic livestock management are the primary contributing factors for not meeting Standard 1 and ORMP soil management objectives of improving unsatisfactory watershed health/conditions for the Lone Tree allotment.

3.3.9.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁷

Standards 2 and 3 are not being met in pastures 1-4 and 6 of the Lone Tree allotment. Five named streams traverse the pastures within the allotment. Approximately 8.3 miles have been assessed and 6.8 miles (82 percent) were rated FAR; however, 3.4 miles showed an upward trend. Issues identified included areas with inadequate soil moisture to support hydric species that stabilize stream banks, the presence of noxious weeds, and sheared and eroded stream banks.

Subsequent to the PFC assessments, two MMIM sites were established on Rose Creek in pasture 4 and on Wickiup Creek on pasture 6. The MMIM site on Rose Creek had a mean stubble height of 7.3 inches, stream banks alteration was 5 percent, and woody use was 5.4 percent. The levels of use were within an appropriate range for maintenance of riparian-wetland areas and steam channels. The MMIM site on Wickiup Creek had a mean stubble height was 6.4 inches, stream banks alteration was 13 percent, and woody use was 6.7 percent. The levels of use were within an appropriate range for maintenance of riparian-wetland areas and steam channels.

Additionally, five springs in pastures 1 and 2 have been assessed. Four of them were most recently FAR, and one was in PFC. All of the springs that were FAR had altered flow patterns caused by soils being sheared by livestock. Lone Tree Spring has been altered by the presence of a dam and a trough. However, most recently (2011), Lone Tree Spring was rated in PFC because the hydric vegetation was abundant, robust, and was regenerating.

Stubble height has been measured in all pastures and on all five named streams between 1997 and 2002, and heights range from 1 to 18 inches.

Table RIPN-21: Lone Tree Allotment riparian condition

	Allotment & Pasture Stream Miles & Condition				
Stream Name	Lone Tree 01 & 02	Lone Tree- 04	Lone Tree- 06	Assessment Issues/ Impacts Identified	Total Miles
Josephine Creek	1.2 (FARU- 2000/ PFC-			bank soils sheared/ some areas of erosion/ fence non-functional	1.2

¹⁶⁷ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Lone Tree (0587) and Louisa Creek (0601) Allotments* document in the project record or on the Idaho BLM Group 3 website

	Allotment & Pasture Stream Miles & Condition				
Stream Name	Lone Tree 01 & 02	Lone Tree- 04	Lone Tree- 06	Assessment Issues/ Impacts Identified	Total Miles
	2011)				
	1.5 (PFC- 2000)				1.5
Long Valley Creek	1.4 (FARS- 2000)			grazing restricting willow cover/ areas of inadequate floodplain development and overwide channel	1.4
Rock Creek	1.0 (FARS- 2000)			areas of inadequate soil moisture to support rip veg and vigorous plants/ areas where banks are unstable	1.0
	0.6 (FARU- 2000)			areas of inadequate soil moisture/ areas where banks are unstable/ point bars are not revegetating	0.6
Rose Creek		1.0 (FARS- 2000)		point bars are not revegetating/ presence of noxious weeds/ areas of inadequate soil moisture, hydric plants to support banks	1.0
Wickiup Creek			1.6(FARU - 2000)	areas of inadequate soil moisture, hydric plants to support banks/ point bars are not revegetating/ presence of noxious weeds	1.6

MMIM Metrics						
Stream Name	Pasture/ Assess Year	Mean Stubble Height (inches)	Woody Use (%)	Streamban k Alteration (%)	Stable Bank (%)	Covered Bank (%)
Rose Creek	4/ 2011	7.3	5.4	5	78	100
Wickiup Creek	6/2011	6.4	6.7	13	66	96

Springs Assessed, Condition, & Issues Identified			
Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Lone Tree Spring	1/2004 & 2011	FAR & PFC	system altered by dam and trough. Near trough heavy pugging/shearing of soils
Unnamed Spring "05871A"	1/2004	FAR	altered flow patterns
Unnamed Spring "05871B"	1/2004	FAR	altered flow patterns/ losing soil moisture/ inadequate rip veg
Unnamed Spring "05872A"	1/2004	PFC	
Unnamed Spring "05872B"	1/2004	FAR	altered flow patterns/ frost heaving present

Standard 7 is being met in the Lone Tree allotment. For IDEQ water quality information associated with the Lone Tree allotment, see table RIPN-3.

3.3.9.1.4 *Special Status Plants*

There is one special status plants that occur within the Lone Creek allotment, doublet. The occurrence of this special status plant is meeting Standard 8. The rangeland health assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006 and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation, and determination documents. The BLM used information in those documents to address the Allotment-specific Affected Environment.

Specific species descriptions and habitat requirements can be found in Section 3.1.4 of this EA. Observations on grazing and trampling effects on this SSPS plant in this allotment are lacking. It is unknown if this population is extinct or if livestock are presently having any impacts on the plants or habitat. Doublet is located in pasture 1. In 1992, when this species was recorded, it was in excellent overall site quality and there were no visible disturbances or threats to the population; however, the amended 2013 assessment found the current habitat condition to be under ecological stress.

3.3.9.1.5 *Wildlife and Special Status Animals*

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Lone Tree allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013a).

Lone Tree allotment is divided into five pastures (Map RNGE-1b). Although sagebrush steppe habitats are the historic climax potential communities based on the ecological site descriptions for the area, juniper woodlands are co-dominant and increasing throughout the allotment (Map GEN-3b). Sage-grouse use within the allotment at most is limited to the breeding season in the northeastern corner of pasture 1 (Map WDLF-3). This same area is at the periphery of habitat correlated with high breeding densities (i.e., 75 percent breeding bird density area; (Doherty, Tack, Evans, & Naugle, 2010); Map WDLF-1). Only the northern portion of pasture 1 is categorized as preliminary priority habitat. Portions of Rock, Josephine, Wickiup, and Rose Creeks are found on public land within the Lone Tree allotment, and several known lentic areas (e.g., spring, seeps) are located in pasture 1 (Maps RIPN-1b). Columbia spotted frog populations are present within all of the sub-watersheds intersected by the allotment, and occur in Josephine Creek and other lentic areas within pastures 1, 5 and 6 (Map WDLF-4). Rock, Josephine, and Wickiup Creeks contain redband trout populations (Map WDLF-4).

Table WDLF-9: Focal habitats that are present on the Lone Tree allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Reduced composition of deep-rooted perennial grasses - Juniper encroachment
Riparian habitats Rose Creek Wickiup Creek Various springs Josephine Creek Long Valley Creek Rock Creek	Limiting	- Inadequate hydric vegetation to stabilize stream banks - Sheared and eroded banks - Redband trout present - Spotted frog present

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Sage-grouse Preliminary Priority Habitat Breeding	Limiting	- Juniper encroachment - Lack of forbs

Overall, Standard 8 for wildlife is not met in the Lone Tree allotment. Upland and riparian habitats are not providing adequate conditions for many shrub-obligate and riparian dependent species. Perennial herbaceous vegetation heights and forb diversity and abundance are not providing suitable nesting and concealment cover or early brood-rearing forage for sage-grouse.

3.3.9.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.9.1.7 Cultural Resources

There are four previously recorded cultural sites within the Lone Tree allotment on BLM administered land. All of the sites are prehistoric lithic scatters and all have notations of grazing-related disturbances mentioned in their reports. Field staff was able to locate and monitor two of the sites, but was unable to find the other two. Site 10OE1405 is experiencing surficial trampling that affects approximately 30 percent of the site's area, but the trails do not exceed 6 centimeters below ground level. Surficial trampling at site 10OE1406 is affecting approximately 20 percent of its surface area with trails up to 12 centimeters deep and an area of heavy trampling localized around a water trough. Plans to mitigate the effects around the trough are currently under consideration. Neither site, however, is adversely affected by livestock activities nor are the characteristics that would qualify them for potential eligibility in the NRHP compromised. BLM staff could not find evidence of sites 10OE1404 and 10OE1407 and was unable to monitor them.

Of the 14 identified potential livestock congregation areas, BLM and contract staff surveyed nine. No new sites resulted from the inventories.

3.3.9.2 Lone Tree Allotment Environmental Consequences

3.3.9.2.1 Alternative 1

3.3.9.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting reduction of active AUMs authorized. Standard 4 was not met due juniper encroachment and current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with annual growing season (5/1 to 7/15) use in pasture 1 and frequent grazing use in pasture 3 late in this same active growing season (Appendix E). The light utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. Frequent grazing use during the active growing season, even when that has occurred at a light utilization levels has limited improvement in upland condition and trend in this allotment.

Under Alternative 1, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season in pasture 1. Juniper encroachment would also continue to limit meeting Standard 4. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.9.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) due to historic grazing and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. The allotment is also not meeting due to juniper encroachment which has the tendency to alter soil infiltration and water holding capacity over time. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.9.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.9.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.9.1), pasture 1 (2) of the Lone Tree allotment would be available to grazing during the spring every year, and pastures 4 and 6 would be open during the summer and fall every year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 7.0 miles of perennial stream and 11.5 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring season of grazing. Recent actual use reported (Appendix B) indicates that pasture 1 (2) of the allotment has primarily been used during the spring months, and pastures 4 and 6 have been used during the summer and fall; therefore, the impacts from these seasons of grazing would likely continue to be most prevalent under Alternative 1.

Under current management, the Lone Tree allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons, and would include an 18 percent increase in the number of active AUMs compared to those currently permitted, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.9.2.1.4 Special Status Plants

There is one SSPS in this allotment. Standards 1, 2, 3, 4, 7, and 8 of the applicable Standards for Rangeland Health are not being met in the Lone Tree allotment. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. The current management regime would allow for grazing in all pastures every year during early summer (pasture 1, (2)), summer, (pasture 3), and fall (pastures 4, 5, and 6) annually, with no scheduled rest or deferment. Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species. The resulting adverse effects on the special status plant site are habitat degradation and decreased population viability, with little or no improvement to the habitat, as described above in Section 3.1.4 in the Environmental Consequences of Alternative 1 Common to All allotments (Section 3.2.) and Common to All Grazing Alternatives (Section 3.2.4.1). It is for the above reasons Alternative 1 will not maintain or improve the habitat for the SSPS.

3.3.9.2.1.5 Wildlife and Special Status Animals

Upland habitat

In upland habitats, juniper competition has reduced the composition of shrubs and herbaceous species below reference site conditions; however, remaining understory species are vigorous and provide forage and cover for wildlife species. Juniper would continue to increase and further reduce the abundance of shrubs, grasses, and forbs. This would further reduce habitat for shrub steppe-dependent species but would increase the habitat available to woodland dependent wildlife species.

Riparian Habitat

Current livestock grazing practices in riparian habitats within pastures 1 and 3 in the Lone Tree allotment has reduced the extent and abundance of riparian vegetation. In some riparian areas soil moisture is inadequate to support hydric species to stabilize stream banks, noxious weeds are present, and stream banks are sheared and eroded. This limits the suitability of these habitats for sage-grouse, spotted frog, redband trout, and other dependent wildlife species. Under Alternative 1, the grazing practices that have resulted in the current conditions in these riparian habitats would be allowed to continue. Grazing riparian habitats every year in pasture 3 during the hot season reduces the vigor and reproductive capability of existing plants and inhibits the establishment of seedlings. Under Alternative 1, riparian and wetland areas would not meet the habitat requirement for sage-grouse (pasture 1), spotted frog, redband trout, and other riparian dependent wildlife species. In pastures 4 and 6, many riparian in narrow rocky canyons are inaccessible to livestock; riparian vegetation species diversity and structural complexity are providing adequate breeding and foraging conditions for many dependent wildlife species. Under Alternative 1, significant progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals) would not occur due to the continuation of annual growing season grazing (pasture 1) and hot-season grazing (pasture 3) that degrades habitat in upland and riparian areas.

Sage-grouse habitat

The necessary vegetation components (sagebrush and perennial bunchgrasses) for sage-grouse habitat are present in the uplands but sagebrush and perennial bunchgrass heights are less than desired to conceal sage-grouse nests. In addition, juniper woodlands in former sagebrush steppe habitats and ongoing juniper encroachment are further reducing sage-grouse habitat quality and availability. Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in the allotment.

Under Alternative 1, the Lone Tree allotment not would progress toward meeting Standard 8.

3.3.9.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.9.2.1.7 Cultural Resources

BLM staff was able to locate two of the four recorded sites in the allotment. Neither site is experiencing adverse effects that would jeopardize eligibility for the NRHP. Plans to mitigate the moderate effects at site 10OE1406 are under consideration. Based on recent field work and the current available data, no known historic properties would be affected by this alternative.

3.3.9.2.2 Alternative 2

3.3.9.2.2.1 Vegetation

Under Alternative 2, the permittee applied to implement a grazing schedule similar to that implemented in the current situation, although the application proposed periodically alternating the season of use of the typical spring use pasture (pasture 1) with the typical fall use pasture (pasture 6). As a result, pasture 1

would frequently receive active growing season grazing use, as would occur under Alternative 1, while pasture 6 would periodically receive active growing season use. The proposed schedule also includes late growing season use annually for pastures 3, 4, and 5. At the same time, the application proposed to maintain active authorized use at 1,523 AUMs, a level of use much greater than the current situation with 942 AUMs used annually. Standard 4 was not met due to juniper encroachment and current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with frequent growing season (5/1 to 7/15) use in pasture 1 and late growing season use in pastures 3, 4, and 5. Adequate opportunity for cool-season bunchgrass plants to complete their annual growth cycle and maintain health and vigor would be provided while allowing periodic growing season use in pasture 6 (Appendix E).

The light utilization of key forage plants documented with recent management would be expected to increase dramatically with the increased AUMs proposed (See Appendix B). This level of utilization would be expected to contribute toward failure to meet Standard 4, especially when those utilization levels occur with use during the active growing season. Frequent grazing use during the active growing season, and when that has occurred at a moderate or greater utilization levels would limit improvement in upland condition and trend in this allotment.

Under Alternative 2, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season in pasture 1. Juniper encroachment would also continue to limit meeting Standard 4. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.9.2.2 Soils

Alternative 2 for the Lone Tree allotment would primarily include spring grazing with some periodic fall use in pasture 1(2) and differs little from Alternative 1. Physical impacts during the wettest period would continue and repetitive critical growing season use would not contribute to increase the ability of native plant communities to provide for soil stability. The remaining pastures 3, 4, 5, and 6 would be deferred from spring grazing and critical growing season use though periodic grazing during those times would occur in the absence of a well-defined rotation. In addition, the allotment would see an increase in livestock numbers, active AUMs, and stocking rate. This would not provide opportunity to increase soil stability due to the ability of native plant communities to remain healthy, vigorous, and productive during active growth or improve watershed health, which is also affected by juniper encroachment. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to Alternative 1 (see Section 3.2.2.3).

3.3.9.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.9.2), pasture 1 (2) of the Lone Tree allotment would be available to grazing during the spring every year, pasture 4 would be open during the summer and fall every year, and pasture 6 would be open during the fall every year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 7.0 miles of perennial stream and 11.5 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring, summer, and fall season of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 (2) of the allotment has primarily been used during the spring months, and pastures 4 and 6 have been used during the summer and fall, and the riparian Standards are not being met.

Under current management, the Lone Tree allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and would include

a 62 percent increase in the number of active AUMs compared to the current situation, it would continue to fail to meet the riparian-wetland Standards under this alternative.

3.3.9.2.2.4 Special Status Plants

Alternative 2 is similar to Alternative 1. This alternative would not provide opportunity to increase habitat quality for SSPS. As a whole, the allotment would not make progress toward improvement compared to Alternative 1, risking further declining conditions and possible impacts to SSPS.

3.3.9.2.2.5 Wildlife and Special Status Animals

Under Alternative 2 the pasture rotation would be relatively similar to Alternative 1 and active AUMs would be increased by 62 percent.

Upland habitat

Upland habitat conditions would deteriorate overall due to continuing competition with juniper and the added grazing pressure of growing season use and increased AUMs. Sagebrush and herbaceous understory species composition would depart further from reference conditions, and production and vigor would decrease. Upland habitats would continue to have increasing amounts of juniper which would reduce the abundance and vigor of shrubs, forbs, and grasses. This would reduce the quantity and quality of sagebrush steppe habitat for dependent species.

Riparian habitat

Under Alternative 2 impacts to upland and riparian habitats would be similar to those described in Alternative 1 but would be intensified by the substantial increase in AUMs and the unspecified growing season use in upland habitats (pastures 4, 5, and 6 in particular) and hot-season use in riparian areas (pasture 1) during time periods when grazing previously did not occur. Riparian habitats in pastures 1 and 3 would be reduced in abundance and complexity which would further limit the quality of habitat for riparian dependent species.

Sage-grouse habitat

Sage-grouse habitat would continue to lack sufficient forbs and be at risk of juniper encroachment. Increased grazing intensity would reduce the height of bunch grasses and their abundance. Juniper encroachment would reduce the abundance and vigor of sagebrush, perennial grasses, and forbs which would reduce cover and forage for sage-grouse. Nesting and brood rearing success would decrease as cover and forage decreased.

Under Alternative 2, the Lone Tree allotment would not make progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals).

3.3.9.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Additional AUMs and cattle and new pasture use dates could lead to additional labor and feed costs. Additional cattle could bring in more revenue from the sale of animals.

3.3.9.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.9.2.3 Alternative 3

3.3.9.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. The intensity of grazing use would also be limited to not exceed 20

percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. Additionally, a reduction in the number of cattle that graze within the allotment, with an allotment-wide stocking rate of approximately 10 acres per AUM compared to the current permit with 4.7 acres per AUM (8.9 acres per AUM with the 800 AUM limitation identified in terms and conditions of the 1997 permit), would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Under Alternative 3, progress toward meeting Standard 4 would occur as a result of limitations to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 4. Additionally, the ORMP objective to improve health and condition of vegetation would be met.

3.3.9.2.3.2 Soils

Alternative 3 would provide yearly deferment from spring grazing in pastures 3, 4, and 5, and 1 out of 2 years of deferment from spring grazing in pastures 1(2) and 6 that would result in reduced physical impacts to soils during the wettest period of the year. Critical growing season use would be deferred a minimum of 1 out of 2 years for pasture 1(2), 4, and 6, which introduces a slight increase in critical growing season use for the latter two pastures; yearly deferment would occur in pastures 3 and 5.

In addition, a decrease in livestock numbers would result in fewer active AUMs that would benefit soils by limiting physical impacts from hoof action and utilization of plants and primarily increase the overall ability of native plant communities to remain healthy, vigorous, and productive during active growth. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 would occur as a result of limitations to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 1 and ORMP objectives (see Section 3.2.2.4).

3.3.9.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.9.3), pasture 1 (2) of the Lone Tree allotment would be available to grazing during the spring one year, and during the fall the second year of a 2-year rotation. Pasture 4 would be open during the summer and early fall the first year, and during the early summer the second year, and pasture 6 would be open during the fall the first year, and during the spring the second year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 7.0 miles of perennial stream and 11.5 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring, summer and fall seasons of grazing. Pastures 1 (2), 4, and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that pastures 1 (2) of the allotment has primarily been used during the spring months, and pastures 4 and 6 have been used during the summer and fall, and the riparian Standards are not being met.

Under current management, the Lone Tree allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 2-year grazing schedule that would incorporate at least one year of riparian area constraint period deferment in the riparian pastures (1, 4, 6), and would include a 24 percent reduction in the number of active AUMs compared to the current situation. Other mandatory terms and conditions of the permit under this alternative would include measures that would reduce impacts (stubble height, woody browse, and bank alteration)

associated with the riparian areas condition. Monitoring would be required within pastures 1 and 4 during year one when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.9.2.3.4 Special Status Plants

Grazing permits would be renewed with actions that provide yearly deferment from spring grazing and would move this allotment to progress toward meeting or maintaining meeting standards and ORMP objects. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment limiting use in the critical growing season for the native plant community. SSPS plant occurrences in this allotment would improve the ability of the native plant communities to remain stable and healthy. With the decrease in AUMs, Alternative 3 is expected to be better for SSPS compared to Alternative 1 and 2, however, not as beneficial as Alternatives 4 or 5.

3.3.9.2.3.5 Wildlife and Special Status Animals

Under Alternative 3, active AUMs would be reduced by 24 percent and a 2-year grazing rotation schedule would be implemented. No pasture would be grazed during the critical upland growing season or the riparian growing season 2 years in a row. Each pasture would receive growing season rest at least every other year. Additional constraints would be placed on pastures 1 and 4 to further limit grazing impacts during important seasons. Under this alternative all pastures rotate their season of use so that no pasture is used at the same time year after year.

Upland habitat

Upland habitats would be able to complete their lifecycles with minimal disturbance every other year. This would allow existing upland vegetation to increase in vigor and provide increased forage and cover for wildlife. However, under Alternative 3, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sagebrush steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Upland habitats would not progress toward meeting Standard 8 due to continued juniper encroachment.

Riparian habitat

Riparian habitats would be able to complete their lifecycles with minimal disturbance every other year. This would allow riparian vegetation to increase in vigor and abundance and provide more habitats for wildlife. Under Alternative 3 riparian habitats would reach PFC and provide adequate habitat for riparian dependent species such as redband trout, spotted frog, and migratory birds. Riparian habitats would make progress toward meeting Standard 8.

Sage-grouse habitat

Areas that currently have adequate shrubs grasses and forbs for productive sage-grouse habitat would increase in vigor and provide increased forage and cover for sage-grouse to feed broods and hide nests and broods. This would increase nest and brood survivorship in these areas. As juniper encroaches it would eventually out-compete the shrubs grasses and forbs required for sage-grouse habitat and sage-grouse would either have reduced nesting success or would abandon the area.

Under Alternative 3, the Lone Tree allotment would not progress toward meeting Standard 8 in the uplands, but riparian habitats would.

3.3.9.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer AUMs and cattle and new pasture use dates and rotations could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.9.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.9.2.4 Alternative 4

3.3.9.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment, with a stocking rate of approximately 10 acres per AUM compared to the current permit with 4.7 acres per AUM (8.9 acres per AUM with the 800 AUM limitation identified in terms and conditions of the 1997 permit). The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. Limits to the intensity of grazing use during the active growing season and 2 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Under Alternative 4, progress toward meeting Standard 4 would occur as a result of limitations to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 4. Additionally, the ORMP objective to improve health and condition of vegetation would be met.

3.3.9.2.4.2 Soils

Alternative 4 would provide a minimum of 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from reduced critical growing season for a minimum of 2 out of 3 years. This would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, reduced susceptibility to accelerated erosion, and lessen concentrated use on upland soils that surround riparian areas. Subsequently, livestock numbers, active AUMs, and stocking rates would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit as a result of restrictions to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 1 and ORMP objectives (see Section 3.2.2.5).

3.3.9.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.9.4), pasture 1 (2) of the Lone Tree allotment would be available to grazing during the spring one year, and during the fall 1 years of a 3-year rotation. Pasture 4 would be open during the spring the first year, and rested for two year, and pasture 6 would be open during the fall the first year, during the spring the second year, and rested the third year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 7.0 miles of perennial stream, and 11.5 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring, summer and fall seasons of grazing. Pastures 1 (2), 4, and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that pastures 1 (2) of the allotment has primarily been used during the spring months, pastures 4 and 6 have been used during the summer and fall, and thus the riparian Standards are not being met.

Under current management, the Lone Tree allotment is not meeting the Standards associated with the riparian-wetland resources. The pastures within the allotment that contains the riparian areas would be managed under a defined 3-year schedule that incorporates at least one year of riparian area deferment as well as one year of rest. The changes in season of use would result in a 46 percent decrease in the active AUMs compared to the current situation. Therefore, the allotment would meet the riparian-wetland Standards and the ORMP objectives under this alternative.

3.3.9.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The SSPS occurrence would be more protected and ensured continued improvement or maintained viability under this alternative, with only Alternative 5 providing a more rapid rate of recovery and significant progress toward meeting, or continue meeting all standards and the ORMP objectives.

3.3.9.2.4.5 Wildlife and Special Status Animals

Under Alternative 4 active AUMs would be reduced by 46 percent and a 3-year rotation system would be established. Pasture 3 has no riparian habitats and would be grazed every year after the critical upland growing season, which should have minimal effects to the vigor and abundance of perennial grasses and forbs. Pastures 1, 4, and 6 would be grazed during the active growing season one year in three and would receive complete rest 1 year in 3. Pasture 5 would be grazed during the critical upland growing season 1 of 3 years and grazed in the fall 2 of 3 years.

Upland habitat

This would allow existing upland vegetation to increase in vigor and provide increased forage and cover wildlife. Light to moderate fall grazing has little effect on the vigor of perennial grasses and forbs since they have completed their growth and reproduction for the year. Under Alternative 4, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sagebrush steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Upland habitats would not progress toward meeting Standard 8 due to continued juniper encroachment.

Riparian habitat

Riparian habitats would increase in vigor and establish new plants because of less grazing during the hot season and periodic rest. Under Alternative 4, riparian habitats would reach PFC and provide adequate habitat for riparian dependent species such as redband trout, spotted frog, and migratory birds. Riparian habitats would make progress toward meeting Standard 8.

Sage-grouse habitat

Areas that currently have adequate shrubs grasses and forbs for productive sage-grouse habitat would increase in vigor and provide increased forage and cover for sage-grouse to feed broods and hide nests and broods. This would increase nest and brood survivorship in these areas. As juniper encroaches it would eventually out-compete the shrubs grasses and forbs required for sage-grouse habitat and sage-grouse would either have reduced nesting success or would abandon the area.

Under Alternative 4, the Lone Tree allotment would be able to develop into whatever potential it has, however, because of juniper encroachment this allotment would not progress toward meeting Standard 8 in the uplands, but riparian habitats would.

3.3.9.2.4.6 Social and Economic Values

See Section 3.2.8.3 above. Fewer AUMs and cattle and new pasture use dates and rotations (including an extra year of deferred grazing) could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.9.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.9.2.5 Alternative 5

3.3.9.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.9.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because adverse impacts to soils from seasonal grazing and active growing season use would be eliminated (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability as juniper encroachment alters soil infiltration and water holding capacity over time. As a whole, Alternative 5 would not make progress toward improving soil and hydrologic function over the life of the permit due to the continued expansion of juniper.

3.3.9.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.9.2.5.4 Special Status Plants

This alternative would give the native plant community significant benefit to make progress toward a healthy, vigorous habitat supporting plant diversity and creating quality SSPS habitats.

3.3.9.2.5.5 Wildlife and Special Status Animals

Under this alternative both riparian and upland habitats would be rested from grazing completely for 10 years. Upland habitat would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. Juniper encroachment would continue to decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that provide improved habitat for riparian dependent species such as the sage-grouse, redband trout, and spotted frog. Under this alternative the riparian habitats would make progress toward meeting Standard 8.

3.3.9.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.9.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.10 Louisa Creek Allotment

3.3.10.1 Louisa Creek Allotment Affected Environment

3.3.10.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-32 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Louisa Creek allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-32: Ecological sites mapped for the Louisa Creek allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,950
	UNKNOWN/NO DATA		136
Pasture 2	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	2
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,826
Pasture 3	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	1,625
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,012
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	207
	UNKNOWN/NO DATA		203
Pasture 4	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	880
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	203
Pasture 5	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	857
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	154
Pasture 6	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	174
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	506

	Ecological Site	Dominant Species Expected	BLM acres
	UNKNOWN/NO DATA		176
	Louisa Creek total acres		9,911

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-32 above, the vegetation inventory for the Louisa Creek allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-33 is a summary of ecological condition within the Louisa Creek allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-33: Ecological condition for public lands in Louisa Creek allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Louisa Creek Allotment (0601)	65%	35%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE 1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Louisa Creek allotment.

Additionally, current vegetation in the Louisa Creek allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-34.

Table VEG-34: Current vegetation in the Louisa Creek allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	2	0%
BIG SAGE	289	3%
BIG SAGE MIX	1	0%
BITTERBRUSH	7	0%

Vegetation Cover Type	Acres	Percent of Allotment
BUNCHGRASS	526	5%
CONIFER	2	0%
EXOTIC ANNUAL	122	1%
GREASEWOOD	0	0%
JUNIPER	3,187	30%
LOW SAGE	2,895	27%
MOUNTAIN BIG SAGE	2,217	21%
MOUNTAIN SHRUB	1,233	12%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	2	0%
WET MEADOW	105	1%
UNKNOWN/NO DATA	4	0%
Total:	10,592	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-32 and VEGE-33. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Louisa Creek allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, limited acreage dominated by exotic annuals are indicative of past disturbances. Bunchgrass communities lacking a significant shrub component are consistent with natural disturbance regimes and the variability in communities present in reference site conditions.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in pastures 3, 4, and 5 of the Louisa Creek allotment due to juniper encroachment into sagebrush steppe vegetation communities. Western juniper was recorded as an invasive species in all pastures of the Louisa Creek allotment, and was present in the greatest amounts in pastures 3 and 4. Juniper occurrence in pasture 5 was noted as a slight-to-moderate departure from reference site conditions, although its presence on site in rangeland health assessment photos and NAIP imagery suggests greater dominance. The dominance of juniper is greater throughout the allotment than identified at reference site conditions, as an inclusion in small locations with shallow soils. Juniper dominance is a result of altered fire regimes and, to a lesser extent, historic livestock grazing practices that reduced fuels. Indicators of biotic integrity, other than the indicator for invasive species where juniper dominance was noted, were documented in the 2006 evaluation as within the range of anticipated deviation. Grazing treatment of pastures 3, 4, and 5 after the active growing season does not lead to a conclusion that current livestock management practices are contributing to the failure to meet Standard 4.

At the same time, a number of information sources indicate that the Owyhee Resource Management Plan management objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has been met within pastures 1 and 2, while not met in pasture 3, 4, and 5. Information sources include the vegetation ecological site inventory data, as updated in the 1999 Owyhee Resource Management Plan, that support the need for improvement from 65 percent early seral condition and 35 percent mid-seral condition; native perennial bunchgrass trend data between 2007 and 2011 at permanent trend plots that identify static and downward trends; and notes at many rangeland health assessment sites identifying vegetation composition dominated by shallow-rooted grasses, inconsistent with reference site conditions.

To summarize, the Louisa Creek allotment is not meeting Standard 4 because juniper encroachment into vegetation communities that should not include juniper in excess of a few scattered trees is competing with native perennial shrub, bunchgrass, and forb species. Fire frequency that is altered from natural disturbance regimes contributes to conditions that lead to a failure to meet the standard due to juniper encroachment. The ORMP vegetation objectives to improve vegetation health/condition are also not met with static and downward trend recorded.

3.3.10.1.2 Soils

Historic grazing practices and western juniper encroachment are significant causal factors for not meeting upland watershed Standard 1 in pasture 3 of the Louisa Creek allotment; pastures 1, 2, 4, and 5 are meeting Standard 1.

Where western juniper encroachment dominates and where desirable shrubs, perennial grasses, and forbs are of low abundance, soil and hydrologic function are negatively affected. Because overall watershed conditions are closely tied to the health of the biotic community, the current imbalance of vegetation composition identified in pastures 3, 4, and 5 for upland vegetation is a concern where juniper encroachment and dominance is not a portion of site potential.

Most indicators of soil and hydrologic integrity were documented as within the range of anticipated deviation with the exception of pasture 3. Soil surface loss and degradation has occurred as evidenced by extreme pedestals and water flow patterns. They are attributed to historic grazing since soils are stabilizing based on developing biological crusts over historic erosion relics and plentiful rock content. However, more recent ground cover data in the pasture shows a downward trend that correlates to a reduction in sagebrush and deep-rooted perennial bunchgrasses that can also be linked to the encroachment of western juniper.

A similar relationship of impaired hydrologic function due to a reduction in a functional range community can be observed in pastures 4 and 5. Though physical soil degradation and stability is currently not a concern due to extensive armoring of surface soils by coarse fragments and rocks, the absence of shrubs and the pasture-wide departure from reference conditions caused by western juniper alter infiltration and soil moisture patterns that do not allow for the proper capture, storage, and management of moisture.

Taken together, soil and hydrologic function are compromised and decrease the ability for proper nutrient cycling, hydrologic cycling, and energy flow. Historic livestock management and the invasion of western juniper are the causal factors in not meeting Standard 1 in pasture 3, while ORMP objectives to improve unsatisfactory and maintain satisfactory watershed health/condition are not met within pastures 3, 4, and 5 of the Louisa Creek allotment due to the pasture-wide encroachment of juniper.

3.3.10.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁸

Standards 2 and 3 are not being met in pastures 1-3 and 6 of the Louisa Creek allotment. Segments of Cow Valley, Josephine, Louisa, North Fork Castle, and Rock Creeks traverse BLM lands within the allotment. Approximately 5.6 miles have been assessed and 4.4 miles (79 percent) were rated functional at-risk (FAR). Issues identified included areas with inadequate soil moisture to support hydric species that stabilize stream banks, the presence of noxious weeds, areas of lateral and vertical instability, and unstable beaver dams.

Additionally, two springs in pastures 1 and 2 have been assessed. Toy Seep was non-functioning (NF), and Antelope Spring was in proper functioning condition (PFC). Although the area inside the enclosure at Antelope Spring contains robust vegetation and was in PFC, the area outside the enclosure has been heavily impacted. In a field visit in 2013, there was excessive tramping and erosion of riparian soils was occurring. The concern identified for Toy Seep was that the development pipes all of the source water into cattle troughs.

Stubble height has been measured in pastures 1-3 between 1996 and 2001, and heights range from 2 to 17 inches, with an average of 4.9 inches.

Table RIPN-22: Louisa Creek Allotment riparian condition

Stream Name	Allotment & Pasture Stream Miles & Condition			Assessment Issues/ Impacts Identified	Total Miles
	Louisa Creek- 01	Louisa Creek - 03	Louisa Creek - 06		
NF Castle Creek	1.2 (FARS- 2000/ exclosure- 2013)			2000- unstable beaver dams/ floodplain not inundated frequently 2013- 50% in exclosure, 40% in canyon, and 10% is a water gap	
Rock Creek			0.6 (FARS- 2001)	areas of inadequate soil moisture/ lack of bank stabilizing species/ areas of lateral instability	0.6
			1.2 (PFC- 2000)		1.2
Louisa Creek		2.6 (FARS- 2000)		noxious weeds present/ areas of inadequate soil moisture to	2.6

¹⁶⁸ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Lone Tree (0587) and Louisa Creek (0601) Allotments* document in the project record or available from the Owyhee Field Office

Allotment & Pasture Stream Miles & Condition					
Stream Name	Louisa Creek- 01	Louisa Creek - 03	Louisa Creek - 06	Assessment Issues/ Impacts Identified	Total Miles
				support rip veg and stable banks/ areas of lateral and vertical instability	

Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Antelope Spring (inside exclosure)	1/2004 & 2013	PFC & photos	vegetation inside exclosure was abundant/ there were two non-functioning troughs inside
Antelope Spring (outside exclosure)	1/2013	photos and notes	headcut developing at outflow/ trampling excessive/ heavy use in adjacent uplands
Toy Seep	2/2004	NF	majority of available water is diverted to a trough for livestock management

Standard 7 is not being met in the Louisa Creek allotment. For IDEQ water quality information associated with the Louisa Creek allotment, see table RIPN-3.

3.3.10.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.10.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Louisa Creek allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013a).

The Louisa Creek allotment is divided into six pastures. Plant Communities within this allotment are a mix of sagebrush steppe and juniper woodlands. The north end of the allotment (pastures 1, 2, and 6) have less juniper encroachment and are used by sage-grouse during the breeding, summer, and winter seasons (IDFG unpublished data). The southern portions of the allotment (Pastures 3, 4, and 5) are more dominated by juniper and appear to be less used by sage-grouse (IDFG unpublished data).

Table WDLF-10: Louisa Creek allotment pastures 1, 2, and 6. Focal habitats that are present and whether current conditions within the pasture are limiting the quality of the habitats

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Not Limiting	-Adequate abundance of deep-rooted perennial grasses and forbs. -Functional structural groups are present in expected abundances. -Increasing abundance of cheatgrass -Slight juniper encroachment

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Riparian habitats North Fork Castle Creek (FAR) Rock Creek (PFC) Toy Seep (NF) Antelope Spring (PFC)	Limiting	-Inadequate riparian vegetation to protect stream banks. -Inadequate residual vegetation to protect stream banks. -Unstable beaver dams. -Redband trout are present. -Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Not Limiting	-Adequate canopy cover and height from deep-rooted perennial grasses and forbs. -Adequate canopy cover and height of sagebrush.

Table WDLF-11: Louisa Creek allotment pastures 3, 4, and 5. Focal habitats that are present and whether current conditions within the pasture are limiting the quality of the habitats

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe Juniper Woodland	Limiting	-Reduced vigor of deep-rooted perennial grasses and forbs -Pedestalling around existing plants. Decreased deep-rooted perennial grasses -Juniper encroachment
Riparian habitats Louisa Creek (FAR)	Limiting	-Inadequate soil moisture to maintain hydric vegetation. -Channel is vertically and laterally unstable. -Inadequate residual vegetation to protect stream banks. -Redband trout are present. -Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding Summer	Limiting	-Decreased cover and height from Perennial grasses and forbs. Juniper Encroachment

3.3.10.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.10.1.7 Cultural Resources

The Louisa Creek allotment contains eight previously recorded prehistoric sites. Only one of the sites, 100E9330, is at a livestock congregation area and has been experiencing cattle-related effects. These effects threatened the site's integrity and put its eligibility characteristics at risk. In consultation with the Shoshone-Paiute Tribes of the Duck Valley Reservation, mitigation measures have been taken during the summer of 2013 to protect the site. The remaining seven sites are not within a 100-meter vicinity of an identified potential livestock congregation area and did not receive a monitoring visit.

Of the 12 potential congregation areas identified, contract personnel surveyed six locations and recorded two new sites. Site 13-O-18-H005 is a possible Civilian Conservation Corps water trough and 13-O-18-P003 is a prehistoric lithic scatter consisting of three flakes. Because both areas are within 50 meters of each other, they will be combined and submitted to SHPO as a single site with two components. The preliminary report states that the prehistoric component is being affected by livestock trampling over 90 percent of its area and has depressions 10 centimeters and deeper. Since the field investigator found only three flakes, he recommended the site be given a not eligible NRHP status; however, it is suggested that the site be further evaluated and a more thorough eligibility determination be made. The lithics area may not qualify as a site or it may contain a larger artifact assemblage. Separately, the trough is judged not eligible. Based on the contractor's findings, the site is not sustaining significant effects that would risk its potential for eligibility.

3.3.10.2 Louisa Creek Allotment Environmental Consequences

3.3.10.2.1 Alternative 1

3.3.10.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting reduction of active AUMs authorized from 1,868 AUMs in the existing permit to 1,798 AUMs. Standard 4 was not met the Louisa Creek allotment due to juniper encroachment. Although the current grazing schedule includes growing season grazing in one of each 2-year cycle in pastures 1 and 2 of the allotment, the alternate year has scheduled deferment that allows an opportunity for the cool-season bunchgrass species to regain vigor. Although impacts to health and vigor of native perennial bunchgrasses would occur with alternate-year scheduled growing season use in each pasture of the allotment, continuation of the utilization levels in the light and moderate category recorded in recent years (See Appendix B) and deferment in alternate years would provide opportunity for some expression of recovery of health and vigor (Appendix E).

Livestock grazing seasons of use and livestock numbers authorized in the allotment with implementation of Alternative 1 would not contribute to either improvement or continued failure to meet Standard 4 in areas where the standard is not being met due to juniper encroachment into sagebrush steppe vegetation communities. Other than the indirect effect from removal of fine fuels that support the spread of wildfire, livestock grazing would have little influence on juniper encroachment.

Under Alternative 1, progress toward meeting Standard 4 would not occur, given the continued expansion and dominance by juniper into sagebrush steppe vegetation types. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although continued implementation of alternate year deferment of grazing use of pastures 1 and 2 in alternate years to a period outside the active growing season would provide continued opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition that included juniper.

3.3.10.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) due to historic grazing and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. The allotment is also not meeting due to juniper encroachment which has the tendency to alter soil infiltration and water holding capacity over time. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.10.1.2, in the

Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.10.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.10.1), pastures 1, 2, and 6 of the Louisa Creek allotment would be available to grazing during the spring for one year, and during the fall the second year of a 2-year rotation. Pasture 3 would be open during the summer and fall every year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 4.1 miles of perennial stream, 23.0 miles of intermittent/ ephemeral stream, and one spring would be affected by the impacts associated with the spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1, 2, and 6 of the allotment have primarily been used during the spring and fall months, and pasture 3 has been used during the summer and fall; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Louisa Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.10.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.10.2.1.5 Wildlife and Special Status Animals

Upland habitat

Upland vegetation in pastures 1, 2, and 6 would maintain vigor and reproductive capability. However cheatgrass and juniper would continue to increase within these pastures and would eventually limit the vigor and reduce the abundance of shrub steppe vegetation. Although an increase in juniper woodlands in the allotment provides novel habitat for special status species such as flammulated owl, Lewis' woodpecker, and Williamson's sapsucker, a loss of shrub steppe vegetation communities results in a deficiency of adequate habitat for sagebrush-obligate and shrub-dependent special status wildlife species including sage-grouse, pygmy rabbit, Brewer's sparrow, sage sparrow, and loggerhead shrike. Upland vegetation in pastures 3, 4, and 5 is already limited by juniper encroachment and under Alternative 1 would continue to decrease in vigor and abundance as juniper continues to increase in density. Habitat for woodland species would increase as the shrub steppe habitat decreases.

Riparian habitat

Conditions within riparian habitats would be maintained or follow their current trend. Some areas would continue to provide adequate cover and forage for the survival and reproduction of riparian dependent species. However other riparian habitats would continue to lack sufficient vegetation to protect stream banks and prevent erosion. Toy Seep in pasture 2 would remain non-functional, and trampling and erosion would continue to reduce vegetation around the spring. This would reduce the cover and forage necessary for the survival and reproduction of riparian dependent species.

Sage-grouse habitat

Sage-grouse habitat would be maintained in pastures 1, 2, and 6 but eventual encroachment by juniper and increases in abundance of cheatgrass would reduce the vigor and abundance of sagebrush, forbs and deep-rooted perennial grasses. This would result in decreased cover and forage for sage-grouse and reduced nest success and individual survivorship. Pastures 3, 4, and 5 are already dominated by juniper encroachment and the habitat for sage-grouse is limited. Under Alternative 1, grazing practices would not

impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in the allotment.

Under Alternative 1, the Louisa Creek allotment would not make progress toward meeting Standard 8.

3.3.10.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.10.2.1.7 Cultural Resources

The BLM has taken mitigation measures to protect site 10OE9330. Site 13-O-18-P003 is of dubious status and it is suggested that an eligibility determination be completed for it; however, it is not experiencing any adverse effects. The remaining sites of record are not in proximity to a livestock congregation area. Therefore, no known historic properties would be affected by this alternative.

3.3.10.2.2 Alternative 2

3.3.10.2.2.1 Vegetation

Under Alternative 2, the permittee made application to maintain active authorized use at 1,868 AUMs. In addition, the application requested that the current grazing schedule for allotment be maintained with alternate year deferment of grazing use to a period outside the active growing season scheduled for pastures 1 and 2, while pastures 3, 4, and 5 would be grazing from early July until late September. Standard 4 was not met Louisa Creek allotment due to juniper encroachment. The current grazing schedule that would be continued under Alternative 2 includes growing season grazing in one of each 2-year cycle in pastures 1 and 2 of the allotment and the alternate year has scheduled deferment that allows an opportunity for the cool-season bunchgrass species to regain vigor. Although impacts to health and vigor of native perennial bunchgrasses would occur with alternate-year scheduled growing season use in each pasture of the allotment, continuation of the utilization levels in the light and moderate category recorded in recent years (See Appendix B) and that are assumed to continue with a minor increase in AUMs authorized compared to Alternative 1 and deferment in alternate years would provide opportunity for some expression of recovery of health and vigor (Appendix E).

Livestock grazing seasons of use and livestock numbers authorized in the allotment with implementation of Alternative 2 would not contribute to either improvement or continued failure to meet Standard 4 in areas where the standard is not being met due to juniper encroachment into sagebrush steppe vegetation communities. Other than the indirect effect from removal of fine fuels that support the spread of wildfire, livestock grazing would have little influence on juniper encroachment.

Under Alternative 2, progress toward meeting Standard 4 would not occur, given the continued expansion and dominance by juniper into sagebrush steppe vegetation types. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although continued implementation of alternate year deferment of grazing use of pastures 1 and 2 in alternate years to a period outside the active growing season would provide continued opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition that included juniper.

3.3.10.2.2.2 Soils

Alternative 2 for the Louisa Creek allotment would provide 1 out of 2 years of rest from spring grazing for pastures 1 and 2(6), yearly deferment for pastures 3, 4, and 5, and be similar to Alternative 1. While physical impacts would be reduced during the wettest period and soils would benefit from avoiding the critical growing season one year, the allotment would see an increase in livestock numbers and active AUMs. This would not provide opportunity to increase soil stability due to the ability of native plant

communities to remain healthy, vigorous, and productive during active growth. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to Alternative 1 (see Section 3.2.2.3).

3.3.10.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.10.2), pastures 1, 2, and 6 of the Louisa Creek allotment would be available to grazing during the spring for one year, and during the fall the second year of a 2-year rotation. Pasture 3 would be open during the summer and fall every year (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 4.1 miles of perennial stream, 23.0 miles of intermittent/ ephemeral stream, and one spring would be affected by the impacts associated with the spring and fall seasons of grazing. Pastures 1-3 and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that pastures 1, 2, and 6 of the allotment have primarily been used during the spring and fall months, and pasture 3 has been used during the summer and fall; and the riparian Standards are not being met.

Under current management, the Louisa Creek allotment is not meeting the Standards associated with the riparian-wetland resources. Since the pastures that contain the riparian areas within the allotment would be used during the same seasons, it would continue to not meet the riparian-wetland Standards under this alternative.

3.3.10.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.10.2.2.5 Wildlife and Special Status Animals

Alternative 2 is essentially the same as Alternative 1, and the expected impacts to upland, riparian, and sage-grouse habitats would be the same. Under Alternative 2, Louisa Creek allotment would not make progress toward meeting Standard 8.

3.3.10.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. The permittee's application is the same as the current situation, and thus there would be no additional impacts.

3.3.10.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.10.2.3 Alternative 3

3.3.10.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. The intensity of grazing use would also be limited to not exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. Additionally, a reduction in the number of cattle that graze within the allotment, resulting in an allotment-wide stocking rate of approximately 10 acres per AUM compared to the current permit at 5.3 acres per AUM, which would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use in all season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species an opportunity to regain or at least maintain health and vigor as detailed in Appendix E.

Livestock grazing seasons of use and livestock numbers authorized in the allotment with implementation of Alternative 3 would not contribute to either improvement or continued failure to meet Standard 4 in areas where the standard is not being met due to juniper encroachment into sagebrush steppe vegetation communities. Other than the indirect effect from removal of fine fuels that support the spread of wildfire, livestock grazing would have little influence on juniper encroachment.

Under Alternative 3, progress toward meeting Standard 4 would not occur, given the continued expansion and dominance by juniper into sagebrush steppe vegetation types. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although implementation of the Alternative 3 grazing schedule that provides deferment of grazing use until after the active growing season in all pastures during 1 of each 3 years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition that includes juniper.

3.3.10.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing for all pastures and would increase the amount of use that pasture 1 currently receives with a 2-year rotation under Alternative 1. While the 3-year rotation would remove 2 extra deferment years for pasture 1 over the life of the permit, pastures 2 and 6 would gain extra rest years. Pasture 3 would see an earlier on-date for summer grazing though additional upland utilization limits would be implemented to mitigate the effects of grazing during the critical growing season.

The main benefits of Alternative 3 would arise from a decrease in grazing intensity that results from lowered livestock numbers, active AUMs, and an adjustment in stocking rates that would contribute to a reduction in physical impacts to soils during the wettest period of the year and ease utilization of plants. This is expected to adequately offset the loss of two deferment years in pasture 1 over the life of the permit and positively affect all other pastures.

On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 would occur in all pastures as a result of restrictions to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 1 and ORMP objectives (see Section 3.2.2.4).

3.3.10.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.10.3), pasture 1 of the Louisa Creek allotment would be available to grazing during the spring for 2 years, and during the fall the third year of a 3-year rotation. Pastures 2 and 6 would be available during the spring for one year, and during the fall for 2 years. Pasture 3 would be open during the early summer one year, and during the summer for two years (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 4.1 miles of perennial stream, 23.0 miles of intermittent/ ephemeral stream, and one spring would be affected by the impacts associated with the spring, summer, and fall seasons of grazing. Pastures 1-3 and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that pastures 1, 2, and 6 of the allotment have primarily been used during the spring and fall months, and pasture 3 has been used during the summer and fall; thus the riparian Standards are not being met.

Under current management, the Louisa Creek allotment is not meeting the Standards associated with the riparian-wetland resources. The pastures that contain the riparian areas within the allotment would be used during the same seasons as the current permit. However, the alternative proposes a 43 percent

reduction in active AUMs compared to the current situation. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration) that would reduce impacts associated with the riparian areas condition. Monitoring would be required within pasture 3 during the year when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.10.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.10.2.3.5 Wildlife and Special Status Animals

Under Alternative 3 the active AUMs would be reduced by 45 percent and a 3-year rotation system would be implemented. In comparison to Alternative 1, grazing under Alternative 3 would provide deferment of grazing during the active growing season from 1 to 3 years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 3 would provide deferment of grazing during the hot-season from one to two years in any consecutive 3-year period in pastures with riparian habitats. Upland and riparian utilization and trampling limits also would be implemented in select pastures and years to mitigate impacts from grazing during the active growing and hot seasons.

Upland Vegetation

Upland vegetation in pastures 1, 2, and 6 would maintain vigor and reproductive capability. However cheatgrass and juniper would continue to increase within these pastures and would eventually limit the vigor and reduce the abundance of shrub steppe vegetation. Upland vegetation in pastures 3, 4, and 5 is already limited by juniper encroachment and under Alternative 1 would continue to decrease in vigor and abundance as juniper continues to increase in density. Habitat for woodland species would increase as the shrub steppe habitat decreases.

Riparian habitat

Under Alternative 3 riparian habitats in the allotment would receive grazing deferment during the hot-season one (pastures 1 and 3) or two (pasture 4) years in any consecutive 3-year period which would result in less use during deferment years (Table ALT-24). Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Improvements in riparian conditions also would occur during years with hot-season use because additional utilization, stubble height, and bank alteration limits would prevent overutilization and degradation of riparian habitats. Deferment of hot-season grazing in combination with intensity limitation terms and conditions in pastures 1 and 3 would allow riparian habitats to progress toward PFC over the term of the permit albeit more slowly than what would be expected in pasture 4 which would improve more rapidly due to more years of hot-season grazing deferment.

Sage-grouse habitat

Sage-grouse habitat would be maintained in pastures 1, 2, and 6 but eventual encroachment by juniper and increases in abundance of cheatgrass would reduce the vigor and abundance of sagebrush, forbs and deep-rooted perennial grasses. This would result in decreased cover and forage for sage-grouse and reduced nest success and individual survivorship. Pastures 3, 4, and 5 are already dominated by juniper encroachment and the habitat for sage-grouse is limited. Under Alternative 3, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in the allotment.

Additional upland and riparian habitat enhancement would occur overall because of reduced grazing intensity due to the reduction in AUMs. Juniper encroachment would continue to prevent the Louisa Creek allotment from meeting Standard 8.

3.3.10.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. There would be fewer AUMs and cattle numbers, the grazing season would be a little shorter, and there would be a new pasture rotation with some earlier grazing on pastures 3, 4, and 5. Thus, there could be additional labor and feed costs, and fewer cattle could bring in less revenue from the sale of animals.

3.3.10.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.10.2.4 Alternative 4

3.3.10.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment from 309 under the current situation to 90 under Alternative 4, resulting in a stocking rate of approximately 10 acres per AUM. This compares to the current permit with 5.3 acres per AUM allotment-wide. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 2 in 3 years of exclusion of use during the active growing season resulting in rest would allow cool-season bunchgrass species to regain or maintain health and vigor as detailed in Appendix E.

Livestock grazing seasons of use and livestock numbers authorized in the allotment with implementation of Alternative 4 would not contribute to either improvement or continued failure to meet Standard 4 in areas where the standard is not being met due to juniper encroachment into sagebrush steppe vegetation communities. Other than the indirect effect from removal of fine fuels that support the spread of wildfire, livestock grazing would have little influence on juniper encroachment.

Under Alternative 4, progress toward meeting Standard 4 would not occur, given the continued expansion and dominance by juniper into sagebrush steppe vegetation types. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although implementation of the Alternative 4 grazing schedule that provides deferment of grazing use until after the active growing season in all pastures during 2 of each 3 years and reduces the intensity of use would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition that includes juniper.

3.3.10.2.4.2 Soils

Alternative 4 would provide a minimum of 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from reduced critical growing season for a minimum of 2 out of 3 years. This would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, reduced susceptibility to accelerated erosion, and lessen concentrated use on upland soils that surround riparian areas. Subsequently, livestock numbers, active AUMs, and stocking rates would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants.

On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit as a result of restrictions to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 1 and ORMP objectives (see Section 3.2.2.5).

3.3.10.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.10.4), pastures 1, 3, and 6 of the Louisa Creek allotment would be available to grazing during the spring and early summer for one year, during the fall of the second year, and rested the second year of a 2-year rotation. Pasture 2 would be open during the summer the first year, during the fall of the second year, and during the spring the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 4.1 miles of perennial stream, 23.0 miles of intermittent/ ephemeral stream, and one spring would be affected by the impacts associated with the spring and fall seasons of grazing. Pastures 1-3 and 6 contain the riparian areas. Recent actual use reported (Appendix B) indicates that pastures 1, 2, and 6 of the allotment have primarily been used during the spring and fall months, and pasture 3 has been used during the summer and fall; and the riparian Standards are not being met.

Under current management, the Louisa Creek allotment is not meeting the Standards associated with the riparian-wetland resources. The pastures that contain the riparian areas within the allotment would be managed under a defined 3-year grazing schedule that incorporates one year of riparian area deferment as well as one year of rest. The pastures would be rested 3 or 4 out of 10 years over the duration of the 10 year permit. Additionally, based on the resource constraints, the alternative proposes a 71 percent reduction in active AUMs compared to the current situation. Therefore, the allotment would meet the riparian-wetland Standards under this alternative.

3.3.10.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.10.2.4.5 Wildlife and Special Status Animals

Grazing under Alternative 4 would provide rest and/or deferment of grazing during the upland growing season from two to three years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 4 would provide rest and deferment of grazing during the hot-season to prevent overuse and degradation two years in any consecutive 3-year period in pastures with riparian. These timing constraints in conjunction with a conservative stocking rate would result in an active AUM reduction of 72 percent.

Upland habitat

Under Alternative 4, upland habitats would have less pressure than any of the other grazing alternatives. With the exception of areas affected by continued juniper encroachment, upland shrub steppe communities would provide productive habitats for shrub steppe dependent wildlife species in the allotment. Herbaceous understory conditions in the uplands would improve and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species.

Riparian habitat

In addition, riparian plants would grow to their potential, reproduce, and establish new plants within riparian habitats. This would result in larger more well developed riparian areas which would provide

increased succulent forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Under Alternative 4 riparian habitats would make rapid progress toward PFC.

Sage-grouse habitat

With the exception of areas affected by continued juniper encroachment, upland shrub steppe communities would provide adequate forage and cover for sage-grouse and other dependent species in the allotment. Herbaceous understory conditions in the uplands would improve and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for sage-grouse. Pastures 3, 4, and 5 are already dominated by juniper encroachment and the habitat for sage-grouse is limited. Under Alternative 4, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in the allotment. Juniper encroachment would continue to prevent the Louisa Creek allotment from meeting Standard 8.

3.3.10.2.4.6 Social and Economic Values

See Section 3.2.8.45 above. There would be fewer AUMs and cattle numbers, and there would be a new pasture rotation with some required rest. Thus, there could be additional labor and feed costs, and fewer cattle could bring in less revenue from the sale of animals.

3.3.10.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.10.2.5 Alternative 5

3.3.10.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Although grazing impacts would be removed for ten years, progress would not be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition due to the continued expansion of juniper into sagebrush steppe vegetation types. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition is limited by juniper dominance of vegetation communities.

3.3.10.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because adverse impacts to soils from seasonal grazing and active growing season use would be eliminated (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability as juniper encroachment alters soil infiltration and water holding capacity over time. As a whole, the allotment would not make progress toward improving soil and hydrologic function over the life of the permit primarily due to the continued expansion of juniper.

3.3.10.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.10.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.10.2.5.5 Wildlife and Special Status Animals

Under Alternative 5 upland and riparian habitats would be rested from grazing for 10 years. Upland habitat in pastures 1, 2, and 6 would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. However, under Alternative 5, juniper encroachment would not be impeded in many upland habitats and would eventually decrease the quality and abundance of upland sagebrush habitats. Pastures 3, 4, and 5 are already dominated by juniper encroachment and the habitat for sage-grouse is limited. Under Alternative 4, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in the allotment.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Riparian dependent wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals), in riparian habitats, but because of juniper encroachment in the uplands Louisa Creek allotment would not make progress toward meeting Standard 8.

3.3.10.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.10.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.11 Meadow Creek FFR Allotment

3.3.11.1 Meadow Creek FFR Allotment Affected Environment

3.3.11.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-35 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Meadow Creek FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-35: Ecological sites mapped for the Meadow Creek FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	trace
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	trace
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	360
Meadow Creek FFR total acres		360

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-35 above, the vegetation inventory for the Meadow Creek FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-36 is a summary of ecological condition within the Meadow Creek FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-36: Ecological condition for public lands in Meadow Creek FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Meadow Creek FFR Allotment (0491)	0%	100%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With less than 40 percent of the allotment in late seral condition, the objective to improve applies to the Meadow Creek FFR allotment.

Additionally, current vegetation in the Meadow Creek FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-37.

Table VEG-37: Current vegetation in the Meadow Creek FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	1	0%
ASPEN	1	0%
BIG SAGE	339	40%
BIG SAGE MIX	0	0%
BITTERBRUSH	4	0%
BUNCHGRASS	128	15%
CONIFER	0	0%
EXOTIC ANNUAL	169	20%
GREASEWOOD	0	0%

Vegetation Cover Type	Acres	Percent of Allotment
JUNIPER	19	2%
LOW SAGE	91	11%
MOUNTAIN BIG SAGE	75	9%
MOUNTAIN SHRUB	6	1%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	19	2%
UNKNOWN/NO DATA	1	0%
Total:	853	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-35 and VEGE-36. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. With the exception of the dominance of a large portion of the allotment by exotic annuals, vegetation communities dominated by species consistent with reference conditions that include mountain big sagebrush, low sagebrush, and bunchgrass remain present. Juniper is currently the dominant component of a small portion of the landscape in the Meadow Creek FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in Meadow Creek FFR allotment, but is making significant progress toward meeting. Although the 2006 Evaluation/Determination for Standard 4 within the Meadow Creek FFR allotment identified a rangeland health assessment completed in 2003, BLM files identify that this assessment was completed by an interdisciplinary team on Sept. 19, 2002, in the Meadow Creek allotment (T.6S, R.2W, Section 33). An overall rating of biotic integrity for the site was identified between a slight-to-moderate and a moderate departure from reference conditions. The brief discussion of the qualitative assessment in the 2006 evaluation only indirectly included detail of the indicators recorded in notes. Those notes identified functional/structural groups with increased shrubs and decreased large bunchgrasses. Additionally, the notes identified no seedheads on grasses growing in the interspace between shrubs. Photos associated with the assessment depict a site devoid of deep-rooted bunchgrasses in the interspaces and extensive bare ground.

In addition, a partially completed rangeland health assessment was recorded in 2005, with indicators for biotic integrity not assessed. Notes included the identification of Sandberg bluegrass as the dominant herbaceous species on site, inconsistent with site potential for the Loamy 13-16" site that is co-dominated by bluebunch wheatgrass and Idaho fescue. Although the 2005 assessment identified the site as a Shallow Claypan 12-16" with inclusions of Loamy 13-16", compared to the 2002 identification of the site as a Loamy 13-16", both sites are co-dominated by the two deep-rooted bunchgrasses in equal production at

reference site conditions. The 2005 assessment identified the vigor of shrubs and grasses in this above-average precipitation year.

Whereas both the 2002 and 2005 assessments depict a rangeland health that has limited representation of deep-rooted bunchgrasses, dominance by Sandberg bluegrass (a shallow-rooted bunchgrass that would be present in limited quantity in reference condition), and sagebrush dominance greater than potential, the 2005 assessment qualitatively identified the representative site in the Meadow Creek FFR allotment in better condition in a good precipitation year than the condition reported in 2002. As a result, although hydrologic cycling, nutrient cycling, and energy flow relative to biotic integrity are altered to a degree, leading to a conclusion that the site is not meeting Standard 4, significant progress toward meeting the Standard has been made. This conclusion differs from the 2006 evaluation using the same qualitative assessments from 2002 and 2005 and no additional data. Although historic grazing management practices have led to the current vegetation composition and its deviation from site potential, no information is present to conclude that current livestock management practices are contributing to the failure to meet the Standard. No long-term trend monitoring has been established for the Meadow Creek FFR allotment.

Actual use data (Appendix B) identify annual deferment of grazing until mid-summer and fall since 2005, which are seasons outside the active growing season for shrub-steppe perennial herbaceous species, which is consistent with the guidelines. Limited utilization data suggest that moderate or greater intensity of use periodically occurs outside the active growing season. In summary, available information leads to a conclusion that the current livestock management practices are consistent with the guidelines, and recent seasons and intensity of grazing use are practices that should allow progress toward meeting Standard 4.

To summarize, although the Meadow Creek FFR allotment is not meeting Standard 4 due to the loss of large bunchgrasses and dominance by sagebrush, significant progress toward meeting the standard has been made. A conclusion if the ORMP objective to improve vegetation health/condition cannot be reached in the absence of trend data. Recent seasons and intensity of grazing use are practices that should allow progress toward meeting Standard 4 and the ORMP vegetation objective.

3.3.11.1.2 Soils

Standard 1 is not being met within the Meadow Creek FFR allotment due to altered hydrologic cycling, nutrient cycling, and energy flow relative to the expected reference conditions, although significant progress toward meeting the Standard has been made. Past livestock grazing management practices are significant causal factors for not meeting watershed Standard 1 and have resulted in accelerated soil erosion, reduced biological crusts, and soil surface loss and degradation. Much of the decline in soil stability and hydrologic function can be associated with a change in deep-rooted bunchgrasses to more shallow-rooted species.

Based on the available data, however, the 2005 assessment qualitatively identified the representative site in the Meadow Creek FFR allotment in a better state than in 2002, while sage-grouse habitat data from 2009 and 2012 reflect similar conditions of suitable vegetation that benefits soil stability and hydrologic function. Although hydrologic cycling, nutrient cycling, and energy flow relative to watershed health are altered and are not meeting Standard 1, significant progress toward meeting the standard has been made in the Meadow Creek FFR allotment.

3.3.11.1.3 Riparian/ Water Quality

Standards 2 and 3 are not applicable, and Standard 7 is not being met in the Meadow Creek FFR allotment. Although the NHD identifies a short reach of stream on BLM lands within the allotment, BLM did not identify the reach for assessment because it is an ephemeral draw that does not support riparian vegetation. Although the BLM did not identify any streams that the PFC protocol would apply to and

Standards 2 and 3 are not applicable, current IDEQ information identifies streams that are 303(d) listed. Therefore, Standard 7 is not being met in the allotment. However, it was determined that current livestock are not the causal factor for not meeting Standard 7 because the streams are listed based on flow alteration that is not attributed to livestock. For IDEQ water quality information associated with the allotment, see table RIPN-1.

3.3.11.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.11.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Meadow Creek FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013c).

Meadow Creek FFR allotment consists of one pasture. The major habitat type within this allotment is sagebrush steppe. Sage-grouse use habitats within the allotment during breeding, summer, and winter seasons (IDFG, unpublished data). No riparian habitats occur on public land within the Meadow Creek FFR allotment.

Table WDLF-12: Focal habitats that are present on the Meadow Creek allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting but improving	<ul style="list-style-type: none"> - Lower than expected composition of deep-rooted perennial grasses. - Higher than expected composition of sagebrush. - Vigor and reproductive capability of bunchgrasses appear to be increasing.
Riparian habitats	Not Applicable	<ul style="list-style-type: none"> - No riparian habitat occurs on public land within the allotment.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting but improving	<ul style="list-style-type: none"> - Sufficient canopy cover of deep-rooted perennial grasses and forbs. - Inadequate height of grass and forb cover. - Vigor and reproductive capability of bunchgrasses appear to be increasing.

Although Standard 8 is not being met within the Meadow Creek FFR, significant progress toward meeting the Standard has been made.

3.3.11.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.11.1.7 Cultural Resources

There are no previously recorded cultural sites in the Meadow Creek FFR allotment. Field staff identified and surveyed four potential livestock congregation areas, but recorded no new sites.

3.3.11.2 Meadow Creek FFR Allotment Environmental Consequences

3.3.11.2.1 Alternative 1

3.3.11.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is December 1-31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment beginning after mid-July, a period after the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Potential impacts to cool-season bunchgrass species from annual active growing season use would be avoided, allowing for recovery of health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met in the allotment, significant progress has occurred.

On land within the allotment that includes significant private land ownership (no more than 42 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the intensity of grazing use would also not limit recovery of health and vigor of bunchgrass species and forbs.

Progress toward meeting Standard 4 would continue in the allotment with the continuation of current livestock management practices that includes grazing use outside the active growing season and limitations to the intensity of use as identified in the 2013 determination. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition

3.3.11.2.1.2 Soils

The implementation of Alternative 1 would continue to not meet but make significant progress toward meeting Standard 1 and ORMP objectives (Section 3.1.2) so that ecological function and site potential would see slow yet ongoing improvement of nutrient cycling, hydrologic cycling, and energy flow. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.11.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.11.2.1.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.11.2.1.4 Wildlife and Special Status Animals

Upland habitat

Deep-rooted perennial grasses and forbs would continue to exhibit increased vigor and reproductive capabilities. Additional seedlings would be established and cover and forage for wildlife species would increase.

Sage-grouse habitat

Vigor of deep-rooted perennial grasses would increase and result in increased height and therefore cover for nesting and brood rearing sage-grouse. The other habitat components for sage-grouse (sagebrush

cover, forb abundance, perennial grass canopy cover) would be maintained and Meadow Creek allotment would provide productive sage-grouse habitat.

Current livestock grazing practices would continue to allow the Meadow Creek allotment to progress toward meeting Standard 8.

3.3.11.2.1.5 Social and Economic Values

See Section 3.2.8.2 above.

3.3.11.2.1.6 Cultural Resources

There are no recorded cultural sites within the allotment. Based on recently completed field surveys and current available data, it is determined that no known historic properties would be affected by this alternative.

3.3.11.2.2 Alternative 2

3.3.11.2.2.1 Vegetation

The season of use identified under Alternative 2 is June 1 to December 10, although flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment beginning after mid-July, a period after the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Potential impacts to cool-season bunchgrass species from annual active growing season use would be avoided, allowing for recovery of health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met in the allotment, significant progress has occurred.

On land within the allotment that includes significant private land ownership (no more than 42 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the intensity of grazing use would also not limit recovery of health and vigor of bunchgrass species and forbs.

Progress toward meeting Standard 4 would continue in the allotment with the continuation of current livestock management practices that includes grazing use outside the active growing season and limitations to the intensity of use as identified in the 2013 determination. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.11.2.2.2 Soils

Under Alternative 2, the season of use in the Meadow Creek FFR allotment is at the discretion of the permittee, but it is expected that use will generally occur after mid-July, as in recent years. Under this management, significant progress towards meeting Standard 1 is occurring. Spring deferment would reduce physical soil impacts during the wettest period and continued improvements in vegetation composition, including increased abundance of mid-stature bunchgrasses and perennial forbs would provide additional protection for soils and facilitate improved hydrologic cycling and energy flow. The risk of mechanical impacts to soils from trampling would be minimized when use occurs in mid-July or later, though progress could be slowed if the allotment is used during the critical growing season and earlier in the year when soils are saturated. As a whole, soil and hydrologic function would continue to make significant progress with Alternative 2 when compared to the current condition (see Section 3.2.2.3).

3.3.11.2.2.3 Special Status Plants

See 3.3.1.1.4 for specific information on this allotment and alternative.

3.3.11.2.2.4 Wildlife and Special Status Animals

Alternative 2 is essentially the same as Alternative 1 except the permit would limit the season of use to summer and fall. Under Alternative 2 the permittee would likely continue to graze the allotment in the late summer and fall. However the permit would allow grazing in June, which is within the critical growing season for upland grasses and forbs. Yearly grazing in the critical growing season can reduce the vigor and abundance of perennial grasses and forbs. This would decrease the quality of sagebrush steppe habitats within the allotment.

Overall under Alternative 2 sagebrush steppe habitats would continue to provide productive sage-grouse habitat and nesting, foraging, and hiding habitat for other shrub dependent species as well. Under Alternative 2 Meadow Creek FFR allotment would continue to make progress toward meeting Standard 8.

3.3.11.2.2.5 Social and Economic Values

See Section 3.2.8.3 above. Fewer cattle and new pasture use dates could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.11.2.2.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.11.2.3 Alternative 3

3.3.11.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Progress toward meeting Standard 4 would continue in the allotment with implementation of livestock management practices under Alternative 3 that include limitations to seasons and intensities of grazing use as identified above. Progress toward meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.11.2.3.2 Soils

Alternative 3 would provide deferment from spring grazing every year that would reduce physical impacts to soils during the wettest and most susceptible period. Critical growing season use could occur earlier than usual in 2 out of 3 years though upland utilization limits would be in place to maintain native plant communities. Alternative 3 also defines grazing periods and would not leave the season of use open although livestock numbers would continue to be at the permittee's discretion. This would only be beneficial if the permittee chooses to change his season of current summer use to spring and critical growing season use, which remains a possibility. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 would continue to occur and is expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.11.2.3.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.11.2.3.4 Wildlife and Special Status Animals

Under Alternative 3, the Meadow Creek FFR would be grazed during the active growing season 2 in 3 years. Additionally utilization limits would be implemented to mitigate the effects of grazing during the active growing season. In the third year grazing would be limited to after the active growing season which would have minimal effects to perennial grasses and forbs.

Upland habitat

Deep-rooted perennial grasses and forbs would continue to exhibit increased vigor and reproductive capabilities. Additional seedlings would be established and cover and forage for wildlife species would increase.

Sage-grouse habitat

Vigor of deep-rooted perennial grasses would increase and result in increased height and therefore cover for nesting and brood rearing sage-grouse. The other habitat components for sage-grouse (sagebrush cover, forb abundance, perennial grass canopy cover) would be maintained and Meadow Creek allotment would provide productive sage-grouse habitat.

Under Alternative 3, Meadow Creek FFR allotment would continue to make progress toward meeting Standard 8.

3.3.11.2.3.5 Social and Economic Values

See Section 3.2.8.4 above. Fewer cattle and new pasture use dates each year in a 3-year cycle could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.11.2.3.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.11.2.4 Alternative 4

3.3.11.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 7.7 acres per AUM, a conservative stocking rate consistent with recent livestock management practices that have resulted in significant progress toward meeting Standard 4 and as identified in the alternative description (Section 2.4.11.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Progress toward meeting Standard 4 would continue in the allotment with implementation of livestock management practices under Alternative 4 that include limitations to seasons and intensities of grazing use as identified above. Progress toward meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.11.2.4.2 Soils

Alternative 4 would provide deferment from spring grazing every year that would reduce physical impacts to soils during the wettest and most susceptible period while deferment from critical growing season would occur 2 out of 3 years. The benefit of Alternative 4 would come from defined grazing periods that would not leave the season of use at the permittee's discretion. In addition, livestock numbers

are more clearly defined to identify the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. As a whole, Alternative 4 would make progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.11.2.4.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.11.2.4.4 Wildlife and Special Status Animals

Upland habitat

Deep-rooted perennial grasses and forbs would continue to exhibit increased vigor and reproductive capabilities. Additional seedlings would be established and cover and forage for wildlife species would increase.

Sage-grouse habitat

Vigor of deep-rooted perennial grasses would increase and result in increased height and therefore cover for nesting and brood rearing sage-grouse. The other habitat components for sage-grouse (sagebrush cover, forb abundance, perennial grass canopy cover) would be maintained and Meadow Creek FFR allotment would provide productive sage-grouse habitat.

Under Alternative 4 Meadow Creek FFR allotment would continue to make progress toward meeting Standard 8.

3.3.11.2.4.5 Social and Economic Values

See Section 3.2.8.5 above. The impacts of Alternative 4 would be similar to the impacts of Alternative 3; however, the impacts would vary by year for this alternative and would be less severe because cattle numbers have not been reduced as much as in Alternative 3.

3.3.11.2.4.6 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.11.2.5 Alternative 5

3.3.11.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.11.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.11.2.5.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.11.2.5.4 Wildlife and Special Status Animals

Under this alternative, no grazing would be authorized on public lands within the Meadow Creek FFR allotment for a term of 10 years. Under this alternative upland habitats would be rested from grazing completely for 10 years. Upland habitat would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. Under Alternative 5 the upland habitats would make progress toward meeting Standard 8.

3.3.11.2.5.5 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.11.2.5.6 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.12 Moore FFR Allotment

3.3.12.1 Moore FFR Allotment Affected Environment

3.3.12.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-38 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Moore FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-38: Ecological sites mapped for the Moore FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	292
¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	35
Moore FFR total acres		327

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-38 above, the vegetation inventory for the Moore FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by

allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-39 is a summary of ecological condition within the Moore FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-39: Ecological condition for public lands in Moore FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Moore FFR Allotment (0606)	20%	80%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Moore FFR allotment.

Additionally, current vegetation in the Moore FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-40.

Table VEG-40: Current vegetation in the Moore FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	3	0%
BIG SAGE	6	1%
BIG SAGE MIX	0	0%
BITTERBRUSH	3	0%
BUNCHGRASS	4	0%
CONIFER	1	0%
EXOTIC ANNUAL	2	0%
GREASEWOOD	0	0%
JUNIPER	266	31%
LOW SAGE	152	18%
MOUNTAIN BIG SAGE	147	17%
MOUNTAIN SHRUB	199	23%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%

Vegetation Cover Type	Acres	Percent of Allotment
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	68	8%
UNKNOWN/NO DATA	0	0%
Total:	850	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-39 and VEGE-40. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Moore FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in the Moore FFR allotment. One RHA was completed in 2001 and concluded that the biotic integrity of the site departed in the none-to-slight category from reference site conditions. The indicator for invasive plants identified the presence of juniper. As noted from photos accompanying that assessment and 2011 NAIP imagery, juniper dominates most public land portions of the allotment. Ecological site descriptions for dominant ecological site of the public land portion of the allotment, the Loamy 13-16" ARTRV/PSSP-FEID site, identify juniper as an invasive species that when dominant, results in a new state requiring management inputs to restore ecological function of the reference site mountain big sagebrush/bunchgrass state. Juniper dominance of the public land portions of the allotment lead to a finding that Standard 4 is not met due to altered fire regimes.

To summarize, the Moore FFR allotment is not meeting Standard 4 because juniper encroachment into vegetation communities that should not include juniper in excess of a few scattered trees is competing with native perennial shrub, bunchgrass, and forb species. Fire frequency that is altered from natural disturbance regimes contribute to conditions that lead to a failure to meet the standard due to juniper encroachment. A conclusion if the ORMP objective to improve vegetation health/condition cannot be reached in the absence of trend data. Recent seasons of annual grazing use that include grazing late during the active growing season annually are practices that may limit progress toward meeting the ORMP vegetation objective.

3.3.12.1.2 Soils

Watershed indicators show very little departure from expected conditions. Although the allotment is labeled as at risk for juniper encroachment that, over time, can alter soil stability and hydrologic function, the existing plant community and soil conditions remain adequate to provide for proper nutrient and hydrologic cycling, and energy flow. Current livestock management is compatible with attainment of Standard 1 for the Moore FFR allotment.

3.3.12.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁶⁹

Standards 2 and 3 are not being met in the Moore FFR allotment. Approximately 0.25 mile of Josephine Creek traverses BLM lands in the Moore FFR allotment. The reach was assessed as a lotic system and was FAR in 2013 because there was shearing of the riparian soil that is leading to the drying of the riparian zone and the encroachment of upland species. Additionally, the channel is incised and erosion is occurring.

Table RIPN-23: Moore FFR allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Josephine Creek	0.25 (FAR-2013)	incised channel/ bank shearing/ erosion/ drying of soils & encroachment of upland species/ sinuosity out of balance/	0.25

Standard 7 is not applicable in the Moore FFR allotment. For IDEQ water quality information associated with the Moore FFR allotment, see table RIPN-3.

3.3.12.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.12.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Moore FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013i).

Moore FFR allotment consists of one pasture and the dominant habitat types are shrub steppe and conifer woodlands. Upland habitats are not meeting Standard 8, primarily due to the conversion of shrub steppe habitat types to woodland/forest habitat types. The increase in woodland habitats in ecological sites where juniper is considered an invasive species and a minor habitat component, at most, comes at the expense of shrub steppe habitats, which are the reference state plant communities and condition for the ecological sites that predominate within the allotment.

Riparian habitat (Josephine Creek) within the allotment is not in proper functioning condition. The reach of Josephine Creek on BLM lands is not providing adequate breeding and foraging conditions for many dependent wildlife species due to a lack of structural diversity, channel incision and erosion, and de-watering of the riparian zone due to soil shearing. These factors result in less than suitable habitat for a diversity of species including migratory birds, redband trout, and Columbia spotted frogs. Current livestock grazing management practices are the causal factor for not meeting Standard 8 wildlife in riparian habitats.

¹⁶⁹ For additional details on the current condition of the allotment, see the *Supplemented Moore FFR (0606) Initial Allotment and Permit/Lease Review and Rangeland Health Assessment* document in the project record or available from the Owyhee Field Office

Table WDLF-13: Focal habitats that are present on the Moore FFR allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Juniper encroachment
Riparian habitats	Limiting	- Erosion - Bank alteration - Drying of riparian habitat - Channel is incised
Sage-grouse	Not Applicable	-Not Preliminary Priority habitat - Most habitat is now juniper woodland

Overall, Standard 8 for wildlife is not being met in the Moore FFR allotment. Upland and riparian habitats are not providing adequate conditions for many shrub-obligate and riparian dependent species.

3.3.12.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.12.1.7 Cultural Resources

There are no previously recorded cultural sites on BLM administered land in the Moore FFR allotment. BLM staff surveyed the only identified potential livestock congregation area, but no new site recordings resulted from the inventory.

3.3.12.2 Moore FFR Allotment Environmental Consequences

3.3.12.2.1 Alternative 1

3.3.12.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is December 1-31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment beginning in early June and extending through early November, a period that includes a portion of the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Although Standard 4 was met in the allotment, impacts to cool-season bunchgrass species from annual active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E.

On land within the allotment that includes significant private land ownership (no more than 38 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the season of grazing use includes a portion of the active growing period, the low intensity has limited impacts to vegetation resources and would continue under Alternative 1.

Because Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment, livestock management action that would be implemented under Alternative 1 would not contribute to failure meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.12.2.1.2 Soils

Under Alternative 1, the Moore FFR allotment would meet Standard 1 and ORMP objectives and continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. The allotment is considered to be at risk due to invasive species, especially juniper, which has the tendency to alter soil infiltration and water holding capacity over time. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.12.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.12.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.12.1), the Moore FFR allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 1.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall months; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Moore FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.12.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.12.2.1.5 Wildlife and Special Status Animals

Upland habitat

Juniper encroachment is severe in this allotment and many shrub steppe habitats have been converted to woodlands. Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Under Alternative 1, the grazing practices that have resulted in the current conditions in riparian habitats would be allowed to continue. Although an increase in juniper woodlands in the allotment provides novel habitat for special status species such as flammulated owl, Lewis' woodpecker, and Williamson's sapsucker, a loss of shrub steppe vegetation communities results in a deficiency of adequate habitat for sagebrush-obligate and shrub-dependent special status wildlife species including sage-grouse, pygmy rabbit, Brewer's sparrow, sage sparrow, and loggerhead shrike.

Riparian habitat

Current livestock grazing practices in riparian habitats within the Moore FFR allotment has reduced the extent and abundance of riparian vegetation. This limits the suitability of these habitats for sage-grouse, spotted frog, redband trout, and other dependent wildlife species. Grazing riparian habitats every year during the growing season reduces the vigor and reproductive capability of existing plants and inhibits the establishment of seedlings. Under Alternative 1, riparian areas would not meet the habitat requirement for spotted frog, redband trout, and other riparian dependent wildlife species. Under Alternative 1 redband trout habitat in Josephine Creek would continue to be at risk of increased temperatures from reduced

shading and sedimentation. Livestock are also grazing and using Josephine Creek for water during the redband trout spawning season which can result in trampling of redds (Gregory & Gamett, 2009).

Under Alternative 1, Moore FFR allotment would continue to not meet Standard 8.

3.3.12.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.12.2.1.7 Cultural Resources

There are no recorded cultural sites in the allotment. Therefore, no known historic properties would be affected by this alternative.

3.3.12.2.2 Alternative 2

3.3.12.2.2.1 Vegetation

The season of use identified under Alternative 2 is between June 1 and November 10, although flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment beginning in early June and extending through early November, a period that includes a portion of the active growing season for cool-season bunchgrass species. It is assumed that this season of use would be continued. Although Standard 4 was met in the allotment, impacts to cool-season bunchgrass species from annual active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E.

On land within the allotment that includes significant private land ownership (no more than 38 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the season of grazing use includes a portion of the active growing period, the low intensity has limited impacts to vegetation resources and would continue under Alternative 1.

Although Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment, livestock management actions that would be implemented under Alternative 1 would not contribute to failure meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.12.2.2.2 Soils

Under Alternative 2, livestock grazing in the Moore FFR allotment could include yearly spring grazing that would increase physical impacts during the wettest period because the permittee retains the flexibility to change grazing management at his discretion. However, Alternative 2 proposes that livestock grazing in the allotment would include yearly deferment from spring grazing that would reduce physical impacts to soils although critical growing season use would take place and influence the active growth of native plant communities that provide for soil stability.

Alternative 2 would differ little from Alternative 1, though soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, the allotment would maintain soil and hydrologic function with Alternative 2 when compared to the current condition but continues to be at risk for juniper (see Section 3.2.2.3).

3.3.12.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.12.2), the Moore FFR allotment would be available for grazing summer and fall annually, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 1.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall months, and the riparian Standards are being met.

Under current management, the Moore FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit and would be at the discretion of the permittee, it would continue to not meet the riparian-wetland Standards under this alternative.

3.3.12.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.12.2.2.5 Wildlife and Special Status Animals

Although Alternative 2 would limit grazing to the summer and fall, it is essentially identical to Alternative 1 because according to the actual use reports between 2001 and 2012, grazing has occurred during this time every year for which we have data. Under Alternative 2, the Moore FFR allotment would continue to not meet Standard 8.

3.3.12.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Fewer cattle and new pasture use dates could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.12.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.12.2.3 Alternative 3

3.3.12.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Although Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment, action under Alternative 3 that limit the seasons and intensity of grazing use as identified above would not contribute to failure meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met. Implementation of the Alternative 3 grazing schedule that provides rest in all pastures during 1 of each 3 years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.12.2.3.2 Soils

Alternative 3 would provide yearly deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 1 out of 3 years of deferment from critical growing season use and for summer riparian grazing. This offers native

plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, reduced susceptibility to accelerated erosion, and would lessen concentrated summer use on upland soils that surround riparian areas.

Alternative 3 also defines grazing periods and would not leave the season of use open although livestock numbers would continue to be at the permittee's discretion. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.12.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.12.3), the Moore FFR allotment would be available for grazing during the summer and fall for 2 years, and during the fall only for the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 1.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall months, and the riparian Standards are being met.

Under current management, the Moore FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Under Alternative 3, the allotment would be managed under a defined 3-year grazing schedule; however, the cattle number would be at the discretion of the permittee. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration that would reduce impacts) associated with the riparian areas condition. Monitoring would be required during the years when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.12.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.12.2.3.5 Wildlife and Special Status Animals

Under Alternative 3 grazing during the active growing season and hot season would occur 2 in 3 years. Limits on stubble height, utilization, and bank alteration would be implemented to mitigate the effects of grazing during the active growing season and the hot season.

Upland habitat

Perennial grasses and forbs would receive less grazing pressure during the growing season compared to the current grazing practices. Grasses and perennial forbs would increase in abundance and vigor. This would improve the quality of upland habitats for dependent species by increasing nesting and hiding cover and forage amounts. Under Alternative 3, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Under Alternative 3, shrub steppe habitats within Moore FFR allotment would not make progress toward meeting Standard 8.

Riparian habitat

Riparian habitats would also receive less grazing pressure during the growing season compared to the current grazing practices. This would allow woody and herbaceous species to increase in vigor and abundance. Increased vigor and abundance would result in more extensive and complex riparian habitats. This would provide improved shading and stability for redband trout, spotted frog and other riparian dependent species. Under Alternative 3, riparian habitats within Moore FFR allotment would make progress toward meeting Standard 8.

3.3.12.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. The impacts from Alternative 3 could be similar to the impacts from Alternative 2. However, new pasture use dates each year in a 3-year cycle could lead to additional labor and feed costs.

3.3.12.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.12.2.4 Alternative 4

3.3.12.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. Because the number of active use AUMs authorized in the allotment would be reduced from 48 to 40, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 8 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.12.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Although Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment, action under Alternative 4 that limit the seasons and intensity of grazing use as identified above would not contribute to failure meeting the standard in the future. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met. Implementation of the Alternative 4 grazing schedule that provides rest in all pastures during one of each three years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.12.2.4.2 Soils

Alternative 4 would provide yearly deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use and summer riparian grazing that provides native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, reduced susceptibility to accelerated erosion, and would lessen concentrated use on upland soils that surround riparian areas.

Alternative 4 also delineates grazing periods, would not leave the season of use at the permittee's discretion, and more clearly define the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers.

On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow

the greatest opportunity for making progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.12.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.12.4), the Moore FFR allotment would be available for grazing during the summer and fall for one year, and during the fall for 2 years of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 1.8 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the summer and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the summer and fall months, and the riparian Standards are being met.

Under current management, the Moore FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Under Alternative 4, the allotment would be managed under a defined 3-year grazing schedule that incorporates 2 years of riparian area growing season deferment. Therefore, the allotment would meet the riparian-wetland Standards under this alternative.

3.3.12.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.12.2.4.5 Wildlife and Special Status Animals

Under Alternative 4 grazing during the active growing season and the hot season would only occur 1 year in 3.

Upland habitat

Perennial grasses and forbs would receive less grazing pressure during the growing season compared to the current grazing practices. Grasses and perennial forbs would increase in abundance and vigor. This would improve the quality of upland habitats for dependent species by increasing nesting and hiding cover and forage amounts. Under Alternative 4, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Under Alternative 4, shrub steppe habitats within Moore FFR allotment would not make progress toward meeting Standard 8.

Riparian habitat

Riparian habitats would also receive less grazing pressure during the growing season compared to the current grazing practices. This would allow woody and herbaceous riparian species to increase in vigor and abundance. Increased vigor and abundance would result in more extensive and complex riparian habitats. This would provide improved shading and bank stability for redband trout and spotted frog. Complex riparian habitats offer improved nesting, hiding, and foraging habitats for riparian dependent species. Under Alternative 4, riparian habitats within Moore FFR allotment would make progress toward meeting Standard 8.

3.3.12.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. Fewer AUMs and cattle and new pasture use dates could lead to additional labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals. The impacts from Alternative 4 would not be as severe as the impacts from Alternative 3 because cattle numbers have not been reduced as much.

3.3.12.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.12.2.5 Alternative 5

3.3.12.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would not be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition, due to juniper expansion into sagebrush steppe vegetation communities.

3.3.12.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would continuously make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.12.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.12.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.12.2.5.5 Wildlife and Special Status Animals

Under this alternative both riparian and upland habitats would be rested from grazing completely for 10 years. Upland habitat would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species. Juniper encroachment would continue in the uplands and would decrease the quality and abundance of upland sagebrush habitats. Under Alternative 5, shrub steppe habitats within Moore FFR allotment would not make progress toward meeting Standard 8. Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger, more well developed riparian areas that provide improved habitat for riparian dependent species such as redband trout, spotted frog, and migratory birds. Under this alternative the riparian habitats would make progress toward meeting Standard 8.

3.3.12.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.12.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.13 Munro FFR Allotment

3.3.13.1 Munro FFR Allotment Affected Environment

3.3.13.1.1 Vegetation, incl. Noxious Weeds

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-41 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Munro FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-41: Ecological sites mapped for the Munro FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	21
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	57
UNKNOWN/NO DATA		trace
Munro FFR total acres		78

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-41 above, the vegetation inventory for the Munro FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-42 is a summary of ecological condition within the Munro FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-42: Ecological condition for public lands in Munro FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Munro FFR Allotment (0461)	20%	80%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Munro FFR allotment.

Additionally, current vegetation in the Munro FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-43.

Table VEG-43: Current vegetation in the Munro FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	8	1%
BIG SAGE	169	29%
BIG SAGE MIX	0	0%
BITTERBRUSH	7	1%
BUNCHGRASS	89	15%
CONIFER	1	0%
EXOTIC ANNUAL	69	12%
GREASEWOOD	0	0%
JUNIPER	49	8%
LOW SAGE	65	11%
MOUNTAIN BIG SAGE	51	9%
MOUNTAIN SHRUB	5	1%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	71	12%
UNKNOWN/NO DATA	0	0%
Total:	584	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-41 and VEGE-42. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. With the exception of the dominance of a portion of the allotment by exotic annuals, vegetation communities dominated by species consistent with reference conditions that include big sagebrush, low sagebrush, and bunchgrass remain present. Juniper is currently the dominant component of a small portion of the landscape in the Munro FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is met in the Munro FFR allotment. One rangeland health assessment was completed in the Munro FFR allotment in 2002. The overall rating for biotic integrity of the site was a non-slight departure from reference site conditions. In addition, the assessment identified that large bunchgrasses (bluebunch wheatgrass and Idaho fescue) were present. Although rabbitbrush is present, adequate mountain big sagebrush and bitterbrush are established. Adequate seedheads for recruitment and stand maintenance were present at the time of the assessment and the plant community was intact and vigorous.

To summarize, the Munro allotment is meeting Standard 4. A conclusion if the ORMP objective to improve vegetation health/condition cannot be reached in the absence of trend data. Recent reported grazing limited to incidental use is a practice that should not limit progress toward meeting the ORMP vegetation objective.

3.3.13.1.2 Soils

Watershed assessment indicators show some departure from expected conditions for the ecological site though none were excessive enough to determine that Standard 1 would not be met. Overall, the plant community and soil conditions are adequate to provide for proper nutrient and hydrologic cycling, and energy flow. In the absence of additional land health assessments or additional data and based on the apparent non-use between 2005 and 2012 (Appendix B), this leads to the conclusion that current livestock management is compatible with attainment of Standard 1 for Munro FFR allotment.

3.3.13.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷⁰

Standard 2 is being met in the Munro FFR. A wet meadow area that is contributing flow to Spring Creek was assessed in 2012 using the PFC protocol. The riparian-wetland area supports a diverse and vigorous herbaceous community. There are no perennial or intermittent streams on Federal lands within this allotment; therefore, Standard 3 does not apply.

Table RIPN-24: Munro FFR allotment riparian condition - Springs Assessed, Condition, & Issues Identified

Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Spring Creek Spring	1/2012	PFC	

Standard 7 is not applicable in the Munro FFR allotment. For IDEQ water quality information associated with the Munro FFR allotment, see table RIPN-3.

3.3.13.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

¹⁷⁰ For additional details on the current condition of the allotment, see the *Supplemented Munro FFR (0461) Initial Allotment and Permit/Lease Review and Rangeland Health Assessment* document in the project record or available from the Owyhee Field Office

3.3.13.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Munro FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013d).

Munro FFR allotment consists of one pasture and is dominated by sagebrush steppe habitats. The public land within this allotment has been fenced off from the private land and has received complete rest for the last 8 years except for some incidental grazing where livestock have got through the fences and onto public land.

Table WDLF-14: Focal habitats that are present on the Munro FFR allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Not Limiting	- Deep-rooted perennial grasses are present in expected abundances - All functional structural groups are present in expected compositions.
Riparian habitats Spring Creek Spring	Not Limiting	- At PFC - Diverse and vigorous herbaceous vegetation - Spotted frog potentially present
Sage-grouse Preliminary Priority Habitat Breeding Summer	Not Limiting	- Adequate canopy cover and height of deep-rooted perennial grasses and forbs - Adequate cover and height of sagebrush - riparian habitat contains abundant herbaceous vegetation for forage during brooding

3.3.13.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.13.1.7 Cultural Resources

There are no cultural sites recorded in the Munro FFR allotment and there are no potential livestock congregation areas identified either. Consequently, BLM staff conducted no monitoring visits and completed no new surveys.

3.3.13.2 Munro FFR Allotment Environmental Consequences

3.3.13.2.1 Alternative 1

3.3.13.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment to a limited level during an unidentified period of the year. On land within the allotment that includes significant private land ownership (no more than 30 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum

allowable limit of 50 percent set in the ORMP. It is assumed that the practice of limiting livestock grazing to incidental use would be continued. With both seasons and intensity of livestock use consistent with practices that would allow bunchgrass species to maintain health and vigor (Appendix E) and the finding that Standard 4 was met in Munro FFR allotment, it is concluded that Standard 4 would continue to be met in the allotment, with livestock management practices at the discretion of the permittee that limits seasons and intensities of grazing use. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.13.2.1.2 Soils

Under Alternative 1, the Munro FFR allotment would meet Standard 1 and ORMP objectives and would continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.13.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.13.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.13.1), the Munro FFR allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, one spring would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been incidentally annually; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Munro FFR allotment is meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.13.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.13.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1, which is a continuation of current grazing practices, the public land on the Munro FFR allotment would continue to receive almost complete rest every year. Sagebrush steppe habitats would continue to provide adequate habitat for dependent species.

Riparian habitat

Riparian habitats would continue to provide adequate habitat for sage-grouse, spotted frogs, and migratory birds. Herbaceous and woody vegetation would maintain their vigor and reproductive capabilities and riparian habitat would be maintained at its current extent and complexity.

Sage-grouse habitat

Sage-grouse habitat would maintain sufficient cover and forage to provide adequate nesting and brood rearing habitat. Standard 8 would continue to be met on the Munro FFR allotment in upland and riparian habitats.

3.3.13.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.13.2.1.7 Cultural Resources

There are no recorded cultural sites; therefore, no known historic properties would be affected by this alternative.

3.3.13.2.2 Alternative 2

3.3.13.2.2.1 Vegetation

Livestock management actions, as defined by terms and conditions, do not differ between alternatives 1 and 2, other than the inclusion of intensity of use limitations within riparian areas. These actions would not change impacts to upland vegetation resources.

Although the season of use identified under Alternative 2 is December 1-31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment to a limited level during an unidentified period of the year¹⁷¹. On land within the allotment that includes significant private land ownership (no more than 30 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that the practice of limiting livestock grazing to incidental use would be continued. With both seasons and intensity of livestock use consistent with practices that would allow bunchgrass species to maintain health and vigor (Appendix E) and the finding that Standard 4 was met in Munro FFR allotment, it is concluded that Standard 4 would continue to be met in the allotment, with livestock management practices at the discretion of the permittee that limits seasons and intensities of grazing use. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.13.2.2.2 Soils

Under Alternative 2, livestock grazing in the Munro FFR allotment could include yearly spring grazing that would increase physical impacts during the wettest period because the permittee retains the flexibility to change grazing management at his discretion. However, Alternative 2 would likely not differ from Alternative 1 where current grazing practices on fenced public land of the allotment would continue to receive almost complete rest every year with little incidental grazing. As a whole, the allotment would maintain soil and hydrologic function with Alternative 2 when compared to the current condition (see Section 3.2.2.3).

3.3.13.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.13.2), the Munro FFR allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, one spring would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been incidentally annually, and Standard 2 is being met.

¹⁷¹ Recent actual use reported has identified no use, but a conversation with the permittee identified that the four public land parcels within the boundary of the Munro allotment have been fenced separate from private land and incidental use of the public land parcels has occurred in recent years.

Under current management, the Munroe FFR allotment is meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to meet the riparian-wetland Standards under this alternative.

3.3.13.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.13.2.2.5 Wildlife and Special Status Animals

Under Alternative 2 the permittee would retain the flexibility to change the grazing management on this allotment in a way that could alter current habitat conditions and cause Munro FFR allotment to not meet Standard 8. However, under Alternative 2, grazing management on the public land within the Munro FFR allotment would likely be the same as is occurring under Alternative 1. Munro FFR allotment would continue to receive almost complete rest every year. This is expected to maintain the same conditions for wildlife species as currently exist. Sagebrush steppe and riparian habitats would continue to provide adequate habitat for sage-grouse, spotted frogs, and migratory birds. Standard 8 would continue to be met on the Munro FFR allotment in upland and riparian habitats.

3.3.13.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Fewer cattle and a shorter grazing season could lead to higher labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.13.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.13.2.3 Alternative 3

3.3.13.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to maintain health and vigor as detailed in Appendix E. Standard 4 would continue to be met in the allotment. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.13.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from a minimum of 1 out of 3 years of deferment from critical growing season use. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion.

While Alternative 3 also defines grazing periods and would not leave the season of use open, livestock numbers would continue to be at the permittee's discretion. However, this alternative would likely not differ from Alternative 1 where current grazing practices on fenced public land of the allotment would continue to receive almost complete rest every year with little incidental grazing. As a whole, the allotment would continue to meet and further benefit from defined grazing seasons of use. Progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is

therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.13.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.13.3), the Munro FFR allotment would be available for grazing during the spring, summer, and fall for the first year, during the summer and fall of the second year, and during the fall the third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, one spring would be affected by the impacts associated with those seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been incidentally annually, and Standard 2 is being met.

Under current management, the Munro FFR allotment is meeting Standard 2 associated with the riparian-wetland resources. The allotment would have a defined season of use that would incorporate at least 1 of 3 years of riparian area constraint period deferment; however, cattle numbers used would remain at the discretion of the permittee. However, the allotment would continue to meet the riparian-wetland Standards under this alternative.

3.3.13.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.13.2.3.5 Wildlife and Special Status Animals

Under Alternative 3 grazing during the active growing season and hot season would occur 2 of 3 years. Limits on stubble height, utilization, and bank alteration would be implemented to mitigate the effects of grazing during the active growing season and the hot season.

Upland habitat

Deferment 1 in 3 years combined with utilization limits would be sufficient to maintain the vigor, complexity, and reproductive capability of the upland habitats even though Alternative 3 increases the grazing pressure when compared to Alternative 1.

Riparian habitat

Deferment 1 in 3 years combined with utilization and bank alteration limits would be sufficient to maintain the vigor, complexity, and reproductive capability of the riparian habitats even though Alternative 3 increases the grazing pressure when compared to Alternative 1.

Sage-grouse habitat

This would increase the amount of use over the current grazing practices but should still maintain adequate habitat qualities for sage-grouse. Standard 8 would continue to be met on the Munro FFR allotment in upland and riparian habitats.

3.3.13.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. Fewer cattle, a shorter grazing season, and different seasons of use in each year of a 3-year cycle (including deferred grazing 1 year of the 3-year cycle) could lead to higher labor and feed costs. Fewer cattle could bring in less revenue from the sale of animals.

3.3.13.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.13.2.4 Alternative 4

3.3.13.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. Because the number of active use AUMs authorized in the allotment would be reduced from 15 to 10, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 8 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.13.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to maintain health and vigor as detailed in Appendix E. Standard 4 would continue to be met in the allotment. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.13.2.4.2 Soils

Alternative 4 would provide 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use that offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion.

Alternative 4 also delineates grazing periods, would not leave the season of use at the permittee's discretion, and more clearly define the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. However, this alternative would likely not differ from Alternative 1 where current grazing practices on fenced public land of the allotment would continue to receive almost complete rest every year with little incidental grazing. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.13.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.13.4), the Munro FFR allotment would be available for grazing during the spring, summer, and fall for one year, and during the fall the second and third year of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, one spring would be affected by the impacts associated with those seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been incidentally annually, and Standard 2 is being met.

Under current management, the Munro FFR allotment is meeting Standard 2 associated with the riparian-wetland resources. The allotment would be managed under a defined season of use, and cattle number and AUMs would have a set maximum based on the percent of public land. Thus, the allotment would continue to meet the riparian-wetland Standards under this alternative.

3.3.13.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.13.2.4.5 Wildlife and Special Status Animals

Alternative 4 would reduce the flexibility of the permittee and would limit grazing to a 3-year rotation system that would require active growing season deferment and hot season deferment 2 of 3 years. This alternative would also reduce the active AUMs by about 33 percent.

Upland habitat

Deferment 2 in 3 years combined with utilization limits would be sufficient to maintain the vigor, complexity, and reproductive capability of the upland habitats even though Alternative 3 increases the grazing pressure when compared to Alternative 1.

Riparian habitat

Deferment 2 in 3 years combined with utilization and bank alteration limits would be sufficient to maintain the vigor, complexity, and reproductive capability of the riparian habitats even though Alternative 4 increases the grazing pressure when compared to Alternative 1.

Sage-grouse habitat

Deferment 2 in 3 years combined with utilization and bank alteration limits would be sufficient to maintain the vigor, complexity, and reproductive capability of the sage-grouse habitats even though Alternative 4 increases the grazing pressure when compared to Alternative 1. Standard 8 would continue to be met on the Munro FFR allotment in upland and riparian habitats.

3.3.13.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. The impacts would vary by year due to different cattle numbers in each year of a 3-year cycle. In year 1, there would be fewer cattle than in Alternative 1, which could bring in less revenue from the sale of animals; in years 2 and 3, there would be more cattle, which could bring in more revenue from the sale of animals. In addition, a shorter grazing season and deferred grazing in 2 years of a 3-year cycle could lead to higher labor and feed costs.

3.3.13.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.13.2.5 Alternative 5

3.3.13.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.13.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would continuously make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.13.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.13.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.13.2.5.5 Wildlife and Special Status Animals

Under this alternative both riparian and upland habitats would be rested from grazing completely for 10 years. Upland habitat would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would remain vigorous and provide forage and cover for upland wildlife species including sage-grouse. Riparian habitats would maintain adequate habitats for sage-grouse, spotted frogs, and migratory birds. Standard 8 would continue to be met on the Munro FFR allotment in upland and riparian habitats.

3.3.13.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.13.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.14 Quicksilver FFR Allotment

3.3.14.1 Quicksilver FFR Allotment Affected Environment

3.3.14.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-44 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Quicksilver FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-44: Ecological sites mapped for the Quicksilver FFR allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	49
	¹⁻² MAHOGANY SAVANNA 16- 22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	5
Pasture 2	DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	trace
	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	53
Butte	DOUGLAS FIR SNOWBERRY	Douglas fir;	7

	Ecological Site	Dominant Species Expected	BLM acres
	22+ PSMEG/SYOR2	snowberry	
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	64
	¹⁻² MAHOGANY SAVANNA 16- 22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	trace
	Quicksilver FFR total acres		178

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-44 above, the vegetation inventory for the Quicksilver FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-45 is a summary of ecological condition within the Quicksilver FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-45: Ecological condition for public lands in Quicksilver FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Quicksilver FFR Allotment (0483)	100%	0%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Quicksilver FFR allotment.

Additionally, current vegetation in the Quicksilver FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-46.

Table VEG-46: Current vegetation in the Quicksilver FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	38	1%
BIG SAGE	77	2%
BIG SAGE MIX	34	1%
BITTERBRUSH	34	1%
BUNCHGRASS	251	8%
CONIFER	174	5%
EXOTIC ANNUAL	136	4%
GREASEWOOD	0	0%
JUNIPER	803	24%
LOW SAGE	54	2%
MOUNTAIN BIG SAGE	727	22%
MOUNTAIN SHRUB	747	23%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	203	6%
UNKNOWN/NO DATA	0	0%
Total:	3,277	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-45 and VEGE-46. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Quicksilver FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant aspen, mountain shrubs, mountain big sagebrush, or low sagebrush in the overstory, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident when comparing the two tables. Past fires and other disturbances are indicated by the dominance by exotic annuals on a limited acreage. The reported limited acreage of bunchgrass is consistent with the variability in reference site communities under natural disturbance regimes, including periodic fire.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is met in pastures 1, 2, and 3 of the Quicksilver FFR allotment with the overall none-to-slight departure of biotic integrity from reference site conditions recorded within the low sagebrush communities of pasture 1 and the mountain big sagebrush communities of pasture 2, while the overall slight-to-moderate departure of biotic integrity from reference site conditions is recorded in pasture 3. Although recent undocumented fires have controlled juniper to a limited degree in localized areas, remaining juniper uncontrolled by natural fire regimes has the potential to contribute to not meeting Standard 4 in the future. Current spring and fall

grazing with a short duration are not likely to impact native perennial bunchgrass health and vigor. No vegetation trend data are available for the Quicksilver FFR allotment, precluding a conclusion about whether the Owyhee Resource Management Plan objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has been met.

To summarize, the Quicksilver FFR allotment is meeting Standard 4. A conclusion if the ORMP objective to improve vegetation health/condition cannot be reached in the absence of trend data. Recent reported grazing that is limited to a short duration during either the spring or fall is a practice that should not limit progress toward meeting the ORMP vegetation objective.

3.3.14.1.2 Soils

Standard 1 is met in the Quicksilver FFR allotment with watershed indicators showing little departure from expected conditions for the ecological sites. Soil and hydrologic function-related indicators vary between none-to-slight and slight-to-moderate and reflect stable soils that display past and some active impacts though abundant gravel, adequate litter, and fair plant diversity are in place to reduce erosion potential.

Recent documented and undocumented fires have controlled juniper to a limited degree in localized areas. Where remaining juniper has not been affected by natural fire regimes, it has the potential to contribute to not meeting Standard 1 in the future so that pastures 1 and 3 are considered to be at-risk. Pasture 2 burned in a 2007 wildfire and the significant beneficial reduction of juniper and the otherwise satisfactory watershed condition present before the fire suggest that the integrity of the site remains.

Soil and hydrologic indicators show that watershed function is maintained with proper nutrient and hydrologic cycling, and energy flow. Overall, current livestock management remains compatible with attainment of Standard 1 and ORMP objectives for the Quicksilver FFR allotment.

3.3.14.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷²

Standards 2 and 3 are not being met in pasture 2 of the Quicksilver allotment. Approximately 0.2 mile of North Boulder Creek occurs on BLM land within pasture 2 of the Quicksilver allotment. The reach was assessed FAR in 2001 because there was a lack of species with root masses capable of protecting stream banks. There had also been a shift from hydric species to those species more suited to drier sites.

Table RIPN-25: Quicksilver FFR allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
North Boulder Creek	0.2 (FAR- 2001)	lack of species with roots capable of protecting stream banks/ shift from deep-rooted hydric species to those species more suited to drier sites	0.2

¹⁷² For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Boone Peak (0589), Red Mountain (0588), Bridge Creek (0590), Quicksilver FFR (0483), and Stahle FFR (0641) Allotments* document in the project record or available from the Owyhee Field Office

Standard 7 is not being met in the Quicksilver FFR allotment. For IDEQ water quality information associated with the Quicksilver FFR allotment, see table RIPN-3.

3.3.14.1.4 Special Status Plants

As previously stated in chapter 3.1.4 of this EA there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.14.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Quicksilver FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013b).

Quicksilver FFR consists of three pastures that are a mix of juniper woodlands and shrub steppe with juniper encroachment. Pastures 1 and 3 contain Preliminary Priority Habitat for sage-grouse. Overall, Standard 8 for wildlife is making significant progress toward being met in the Quicksilver FFR allotment. Pasture 1 is used as a short term holding pasture usually for a week or less in each the spring and fall. Although the standard is not being met in pasture 1, significant progress toward meeting the standard is occurring in pasture 2, and the standard is being met in pasture 3. In general, many indicators of upland rangeland health were near reference conditions in all pastures. However, pasture 1 was affected by conversion to juniper woodlands and exhibited a moderate departure from ecological site reference conditions.

Riparian habitat is only found in pasture 2 and although the assessed segment of North Fork Boulder Creek was FAR, the pasture is making progress toward meeting Standard 8. Redband trout are known to occur within North Fork Boulder Creek and spotted frogs may also occur. Although some issues were noted such as noxious weeds and low herbaceous hydric species diversity, woody species displayed diverse age-classes which are providing structurally complex breeding, nesting, and foraging habitat which is at least minimally adequate for dependent migratory bird species and other wildlife species.

Table WDLF-15: Focal habitats that are present on the Quicksilver FFR allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe Juniper Woodland	Not Limiting	- Functional Structural groups are present in expected compositions - Deep-rooted perennial grasses are present and vigorous
Riparian habitats North Boulder Creek	Limiting	- Lack of hydric vegetation capable of stabilizing stream banks - shift away from hydric vegetation - Redband trout are present - Spotted frogs maybe present
Sage-grouse Preliminary Priority Habitat Summer	No Data	-Refer to Upland Plant Community - Pasture 1 has juniper encroaching on sage-grouse habitat

3.3.14.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.14.1.7 Cultural Resources

There are no cultural resources sites recorded in the Quicksilver FFR allotment and there are no potential livestock congregation areas identified. Consequently, BLM staff conducted no monitoring visits and completed no new surveys.

3.3.14.2 Quicksilver FFR Allotment Environmental Consequences

3.3.14.2.1 Alternative 1

3.3.14.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used pastures 1 and 3 beginning in early June, while pasture 2 has been periodically used during this period of the year. Generally, June is the later portion of the active growing season for cool-season bunchgrass species in the allotment. It is assumed that grazing practices that include the recent frequency of this active growing season of use would be continued. Impacts to cool-season bunchgrass species from frequent active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E.

On land within the allotment that includes significant private land ownership (no more than 30 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued. Standard 4 was met in the Quicksilver FFR allotment, leading to a conclusion that although frequent grazing use has occurred during the active growing season, the intensity of use has been limited to a degree adequate to allow cool-season bunchgrass species to maintain health and vigor.

As a result, Standard 4 would continue to be met in the allotment with the seasons and intensities of grazing use at the discretion of the permittee. Meeting the standard would also result in meeting the ORPM objective to improve unsatisfactory vegetation health and condition.

3.3.14.2.1.2 Soils

Under Alternative 1, the Quicksilver FFR allotment would meet Standard 1 and ORMP objectives and continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. The allotment is considered to be at risk due to invasive species, especially juniper, which has the tendency to alter soil infiltration and water holding capacity over time. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.14.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.14.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.14.1), the Quicksilver FFR allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 0.4 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing.

Pasture 2 contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 2 of the allotment has primarily been used during the summer and fall months; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, pasture 2 of the Quicksilver FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.14.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.14.2.1.5 Wildlife and Special Status Animals

Upland habitat

Upland vegetation would maintain its current vigor and reproductive capability and maintain the diversity and complexity of habitats within the Quicksilver allotment. Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of sage-grouse habitat in pasture one (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013).

Riparian habitat

Current livestock grazing practices in riparian habitats within the Quicksilver allotment have reduced the extent and abundance of riparian vegetation. This limits the suitability of these habitats for sage-grouse, spotted frog, redband trout, and other dependent wildlife species. Riparian areas would continue to lose hydric vegetation and stream banks would become increasingly unstable. Cover and forage would be reduced for riparian dependent species. Shading would be reduced for redband trout and water temperatures would increase.

3.3.14.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.14.2.1.7 Cultural Resources

There are no recorded cultural sites in the allotment; therefore, no known historic properties would be affected by this alternative.

3.3.14.2.2 Alternative 2 (Red Hill Allotment that combines 3 pastures of the Quicksilver FFR & the Stahle FFR Allotments)

3.3.14.2.2.1 Vegetation

Under Alternative 2, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill allotment (see Section 2.4.14.2).

The season of use identified under Alternative 2 is December 1-31, although flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the two allotments at varied times, including the active growing season for upland plant species (May 1 through July 15). It is assumed that this season of use would be continued. Impacts to cool-season bunchgrass species from annual active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E.

On land within the allotment that includes significant private land ownership, additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued. Standard 4 was met in the existing Quicksilver FFR allotment and while Standard 4 was not met in the existing Stahle FFR allotment, juniper encroachment was identified as the causal factor, leading to a conclusion that although frequent grazing use has occurred during the active growing season, the intensity of use has been limited to a degree adequate to allow cool-season bunchgrass species to maintain health and vigor.

As a result, Standard 4 would continue to be met in pastures 1, 2, and 3 of the proposed Red Hill allotment and although progress toward meeting the standard would not be made in pasture 4, proposed livestock management practices would not be a causal factor toward failure to meet the standard.

3.3.14.2.2.2 Soils

Under Alternative 2, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill FFR allotment (see Section 2.4.14, 3.1.2, and 3.2.2.1).

Under Alternative 2, livestock grazing in the Red Hill FFR allotment would occur year-round in all four pastures at the discretion of the permittee and would be similar to Alternative 1. In the absence of a defined grazing schedule, physical impacts during the wettest and most susceptible period are possible while repetitive growing season use would not contribute to increase the ability of native plant communities to provide for soil stability. However, all pastures of the allotment are currently meeting with likelihood to continue to meet standards and to maintain watershed health. As a whole, the allotment is expected to maintain soil and hydrologic function with Alternative 2 when compared to the current condition but continues to be at risk for juniper (see Section 3.2.2.3).

3.3.14.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.14.2), pasture 2 of the Red Hill allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 0.4 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Pasture 2 contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 2 of the allotment has primarily been used during the summer and fall months; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, pasture 2 of the Red Hill allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and use would be at the discretion of the permittee, it would continue to not meet the riparian-wetland Standards under this alternative.

3.3.14.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.14.2.2.5 Wildlife and Special Status Animals

Under this alternative the Quicksilver FFR and the Stahle FFR allotments would be combined to form the new Red Hill FFR allotment. The Quicksilver pastures would retain their number and the one pasture in the Stahle FFR allotment would be designated pasture 4. The grazing management would be expected to remain the same as it was under the Quicksilver FFR and Stahle FFR allotments. Impacts under this alternative would be the same as described for Alternative 1 for each allotment.

3.3.14.2.2.6 Social and Economic Values

See Section 3.2.8.1. The Quicksilver FFR and Stahle FFR allotments have been combined in this alternative to create the Red Hill FFR allotment. AUMs and cattle numbers in the Red Hill FFR allotment would be equal to the total AUMs and cattle numbers in Alternative 1 for the Quicksilver FFR and Stahle FFR allotments combined, so there would be no impact to social and economic values from this alternative.

3.3.14.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.14.2.3 Alternative 3 (Red Hill Allotment that combines 3 pastures of the Quicksilver FFR & the Stahle FFR Allotments)

3.3.14.2.3.1 Vegetation

Under Alternative 3, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill allotment (see Section 2.4.14.3).

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 for pasture 4 and 5/1 to 7/15 in pastures 1, 2, and 3) in 1 of 3 years. In addition, the intensity of grazing use would be limited to not exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30 or 7/15 as applicable. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Standard 4 would continue to be met in pastures 1, 2, and 3 of the proposed Red Hill allotment and although progress toward meeting the standard would not be made in pasture 4, proposed livestock management practices would not be a causal factor toward failure to meet the standard.

3.3.14.2.3.2 Soils

Under Alternative 3, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill FFR allotment (see Section 2.4.14, 3.1.2, and 3.2.2.1).

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 1 out of 3 years of deferment from critical growing season use for all pastures and for summer riparian grazing in pasture 2. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion, and would lessen concentrated use on upland soils that surround riparian areas. Alternative 3 also defines grazing periods and would not leave the season of use open although livestock numbers would continue to be at the permittee's discretion. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the risk of juniper encroachment. As a whole, the allotment would continue to meet and further benefit from defined grazing seasons of use. Progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.14.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.14.3), pasture 2 of the Red Hill allotment would be available for grazing year-round, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 0.4 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of

grazing. Pasture 2 contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 2 of the allotment has primarily been used during the summer and fall months, and the riparian Standards are not being met.

Under current management, pasture 2 of the Red Hill allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that incorporates at least one year of riparian area constraint period deferment. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration) that would reduce impacts associated with the riparian areas condition. Monitoring would be required within pasture 2 during the years when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.14.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.14.2.3.5 Wildlife and Special Status Animals

Under Alternative 3 the Red Hill FFR allotment would be formed and a 3-year rotational grazing plan would be implemented.

Pasture 1 Upland habitat

Pasture 1 would not be grazed before July 16 in 1 of 3 years. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 1 of 3 years. Perennial grasses and forbs would maintain their vigor and abundance except where juniper encroachment is limiting understory growth. Improved abundance and vigor of grasses and forbs would increase forage and cover for shrub-steppe dependent wildlife species. Grazing on or after July 16 would have little effect on the vigor and reproductive capabilities of perennial grasses and forbs. 2 of 3 years pasture 1 would be grazed before July 16 which could reduce the vigor and reproductive capability of perennial forbs and grasses in those years. Pasture 1 would not be expected to make progress toward meeting Standard 8 primarily due to juniper encroachment.

Pasture 2 Upland habitat

Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 1 of 3 years. When livestock graze pasture 2 during the active growing season in 2 of 3 years additional constraints would be placed to limit utilization in the uplands. Perennial shrubs, grasses, and forbs would maintain vigor and reproductive capabilities which would provide adequate cover and forage for upland wildlife species.

Pasture 2 Riparian habitat

Pasture 2 would not be grazed before October 1 in 1 of 3 years. Riparian vegetation would grow, reproduce, and establish in 1 of 3 years without disturbance from livestock. Redband trout and spotted frogs would also spawn and breed without disturbance from livestock 1 in 3 years. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 1 of 3 years. When livestock graze pasture 2 during the hot season in 2 of 3 years additional constraints would be placed to limit utilization, stubble height and bank alteration in riparian habitats. Woody and herbaceous vegetation would improve in vigor and reproductive capabilities. Hydric vegetation would expand and stabilize stream channels and increase cover and forage for wildlife species.

Under Alternative 3, pasture 2 would be grazed in a similar manner to the current grazing management but with the additional use constraints in the riparian and upland habitats. Under Alternative 3, pasture 2 would be expected to continue to progress toward meeting Standard 8.

Pasture 3 Upland Vegetation

Pasture 3 would not be grazed before July 16 in 2 of 3 years. This would reduce grazing pressure during the growing season for perennial shrubs and grasses. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 2 of 3 years. Perennial grasses and forbs would increase in vigor and abundance and would increase the amount and quality of cover and foraging habitat for shrub-steppe dependent species. Pasture 3 would continue to meet Standard 8.

Pasture 4 Upland habitat

Pasture 4 would not be grazed before July 16 in 2 of 3 years. Currently pasture 4 is used as a short term holding pasture usually for a week or less in each the spring and fall. Alternative 3 would increase the grazing pressure in pasture 4, but without grazing before July 16 in 2 of 3 years, perennial grasses and forbs would maintain their vigor and abundance except where juniper encroachment is limiting understory growth. Pasture 4 would not be expected to make progress toward meeting Standard 8 primarily due to juniper encroachment.

3.3.14.2.3.6 Social and Economic Values

See Section 3.2.8.1. The Quicksilver FFR and Stahle FFR allotments have been combined in this alternative to create the Red Hill FFR allotment. AUMs in the Red Hill FFR allotment would be equal to the total AUMs in Alternative 1 for the Quicksilver FFR and Stahle FFR allotments combined. However, there would be fewer cattle, which could bring in less revenue from the sale of animals; in addition, the operators would have to adhere to new pasture rotations and different grazing seasons, which could lead to additional labor and feed costs.

3.3.14.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.14.2.4 Alternative 4 (Red Hill Allotment that combines 3 pastures of the Quicksilver FFR & the Stahle FFR Allotments)

3.3.14.2.4.1 Vegetation

Under Alternative 4, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill allotment (see Section 2.4.14.4). Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 for pasture 4 and 5/1 to 7/15 in pastures 1, 2, and 3) in 2 of 3 years. In addition, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 5.6 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.14.4). In combination, limits to the season of grazing use and the stocking rate prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Standard 4 would continue to be met in pastures 1, 2, and 3 of the proposed Red Hill allotment and although progress toward meeting the standard would not be made in pasture 4, proposed livestock management practices would not be a causal factor toward failure to meet the standard.

3.3.14.2.4.2 Soils

Under Alternative 4, Quicksilver FFR pastures 1, 2, and 3 and pasture 1 of the Stahle FFR would convert to the newly configured four-pasture Red Hill FFR allotment (see Section 2.4.14, 3.1.2, and 3.2.2.1).

Alternative 4 would provide 2 out of 3 years of deferment that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use that would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Deferment in 2 out of 3 years for summer riparian grazing in pasture 2 would also lessen concentrated use on upland soils that surround riparian areas.

In addition, livestock numbers are more clearly defined to identify the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the risk of juniper encroachment. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.14.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.14.4), pasture 2 of the Red Hill allotment would be available for grazing during the spring the first year, during the summer and fall the second year, and during the fall the third year of a 3-year grazing rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 0.2 miles of perennial stream, and 0.4 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring, summer, and fall seasons of grazing alternately among the three years. Pasture 2 contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 2 of the allotment has primarily been used during the summer and fall months; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, pasture 2 of the Red Hill allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that would incorporate 2 of 3 years of riparian area constraint period deferment. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.14.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.14.2.4.5 Wildlife and Special Status Animals

Grazing under Alternative 4 would provide deferment of grazing during the upland growing season two years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 4 would provide deferment of grazing during the hot-season to prevent overuse and degradation of riparian habitats 2 years in any consecutive 3-year period in pasture 2.

Pasture 1 Upland habitat

Pasture 1 would not be grazed before July 16 in 2 of 3 years. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 1 of 3 years. Perennial grasses and forbs would maintain their vigor and abundance except where juniper encroachment is limiting understory growth. Improved abundance and vigor of grasses and forbs would increase forage and cover for shrub-steppe dependent wildlife species. Grazing on or after July 16 would have little effect on the vigor and reproductive capabilities of perennial grasses and forbs. Juniper encroachment would continue in pasture 1 and eventually would reduce both the vigor and abundance of shrubs, grasses, and forbs. Pasture 1

would not be expected to make progress toward meeting Standard 8 primarily due to juniper encroachment.

Pasture 2 Upland habitat

Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 2 of 3 years. Perennial shrubs, grasses, and forbs would maintain vigor and reproductive capabilities which would provide adequate cover and forage for upland wildlife species.

Pasture 2 Riparian habitat

Pasture 2 would not be grazed before October 1 in 2 of 3 years. Riparian vegetation would grow, reproduce, and establish in 1 of 3 years without disturbance from livestock. Redband trout and spotted frogs would also spawn and breed without disturbance from livestock 2 in 3 years. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 2 of 3 years. Woody and herbaceous vegetation would improve in vigor and reproductive capabilities. Hydric vegetation would expand and stabilize stream channels and increase cover and forage for wildlife species.

Under Alternative 4, pasture 2 would be expected to continue to progress toward meeting Standard 8.

Pasture 3 Upland Vegetation

Pasture 3 would not be grazed before July 16 in 2 of 3 years. This would reduce grazing pressure during the growing season for perennial shrubs and grasses. Upland vegetation would grow, reproduce, and establish seedlings without disturbance from livestock 2 of 3 years. Perennial grasses and forbs would increase in vigor and abundance and would increase the amount and quality of cover and foraging habitat for shrub-steppe dependent species. Pasture 3 would continue to meet Standard 8.

Pasture 4 Upland habitat

Pasture 4 would not be grazed before July 16 in 2 of 3 years. Currently pasture 4 is used as a short term holding pasture usually for a week or less in each the spring and fall. Alternative 4 would increase the grazing pressure in pasture 4, but without grazing before July 16 in 2 of 3 years, perennial grasses and forbs would maintain their vigor and abundance except where juniper encroachment is limiting understory growth. Pasture 4 would not be expected to make progress toward meeting Standard 8 primarily due to juniper encroachment.

3.3.14.2.4.6 Social and Economic Values

See Section 3.2.8.1. The Quicksilver FFR and Stahle FFR allotments have been combined in this alternative to create the Red Hill FFR allotment. AUMs in the Red Hill FFR allotment would be equal to the total AUMs in Alternative 1 for the Quicksilver FFR and Stahle FFR allotments combined, but there would be more cattle, which could bring in more revenue from the sale of animals. However, the operators would have to adhere to new pasture rotations and different grazing seasons, which could lead to additional labor and feed costs.

3.3.14.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.14.2.5 Alternative 5

3.3.14.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.14.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.14.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.14.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.14.2.5.5 Wildlife and Special Status Animals

Under Alternative 5 upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would continue to provide productive sage-grouse habitat in and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. However, under Alternative 5, juniper encroachment would not be impeded in many upland habitats and would eventually decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Terrestrial and aquatic wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals), especially in riparian habitats.

3.3.14.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.14.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.15 Red Mountain Allotment

3.3.15.1 Red Mountain Allotment Affected Environment

3.3.15.1.1 Vegetation, incl. Noxious Weeds

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-47 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Red Mountain allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-47: Ecological sites mapped for the Red Mountain allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	946
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	337
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1,873
	SALINE BOTTOM 8-12 SAVE4/LECI4	black greasewood; basin wildrye	2
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	243
	UNKNOWN/NO DATA		146
Pasture 2	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	556
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	878
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1,039
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	1,562
	¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	317
Pasture 3	DOUGLAS FIR SNOWBERRY 22+ PSMEG/SYOR2	Douglas fir; snowberry	99
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	12
	¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	263
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	800
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	56

	Ecological Site	Dominant Species Expected	BLM acres
	^{1,2} MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry; Idaho fescue-needlegrass	98
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	145
	¹ SHALLOW CLAYPAN 11-13 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	1,055
	^{1,2} SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	4, 094
	UNKNOWN/NO DATA		161
	Red Mountain total acres		14,680

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-47 above, the vegetation inventory for the Red Mountain allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-48 is a summary of ecological condition within the Red Mountain allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-48: Ecological condition for public lands in Red Mountain allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Red Mountain Allotment (0588)	70%	20%	10%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Red Mountain allotment.

Additionally, current vegetation in the Red Mountain allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-49.

Table VEG-49: Current vegetation in the Red Mountain allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	32	0%
BIG SAGE	7,349	46%
BIG SAGE MIX	328	2%
BITTERBRUSH	5	0%
BUNCHGRASS	894	6%
CONIFER	178	1%
EXOTIC ANNUAL	585	4%
GREASEWOOD	165	1%
JUNIPER	1,090	7%
LOW SAGE	794	5%
MOUNTAIN BIG SAGE	1,999	12%
MOUNTAIN SHRUB	286	2%
RABBITBRUSH	73	0%
SALT DESERT SHRUB	1,755	11%
SEEDING	179	1%
SPARSE VEGETATION	11	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	329	2%
UNKNOWN/NO DATA	0	0%
Total:	16,052	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-44 and VEGE-45. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. With the exception of limited acreage dominated by exotic annuals or juniper, vegetation communities dominated by species consistent with reference conditions that include salt desert shrub, big sagebrush, low sagebrush, and bunchgrass remain present.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in all pastures of the Red Mountain allotment. Historic grazing management contributed to the near loss of native deep-rooted perennial bunchgrass plants in pastures 1 and 2, while historic grazing management contributed toward the large decline of native deep-rooted perennial bunchgrass plants in pasture 3. Recent trend monitoring in pastures 1 and 2 identify improving conditions within the constraints of limited seed to establish deep-rooted bunchgrass plants. At the same time, recent trend monitoring in pasture 3 indicates a decline in deep-rooted bunchgrasses and increasing frequency of shallow-rooted bunchgrass. Pastures 1 and 2 are making significant progress toward meeting the standard, as evidenced by upward trend. These data lead to the conclusion that current livestock management practices that schedule grazing prior to the active growing season for native perennial bunchgrasses (May 1 - June 30 is

the active growing season at lower elevation) in pastures 1 and 2 are not a factor contributing toward not meeting Standard 4. Conversely, annual grazing scheduled during the active growing season in pasture 3 is a contributing factor to not meeting Standard 4. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhardt & Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequent as 2 of every 3 years or more often

Trend data indicate that the ORMP objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has been met in pastures 1 and 2 with upward trend recorded, while not met in pasture 3, with its downward trend.

To summarize, the Red Mountain allotment is not meeting Standard 4 in all pastures, although significant progress is made in pastures 1 and 2 with upward trend. At the same time, current livestock management practices contribute toward not meeting the standard in pasture 3. Although the ORMP objective to improve unsatisfactory vegetation health/condition is met in pastures 1 and 2, the objective is not met in pasture 3 under the current livestock management practices that include annual grazing during the active growing season.

3.3.15.1.2 Soils

Current and past livestock grazing management practices are significant causal factors for not meeting upland watershed Standard 1 in pastures 1 and 2 of the Red Mountain allotment; pasture 3 is meeting Standard 1. The reduction in soil and hydrologic function is associated with altered plant community composition and distribution due to decreased relative abundance of large, deep-rooted native perennial bunchgrasses. As a result, erosional processes have created severe water flow paths and pedestaling of plants.

While much of the departures in watershed function from reference conditions for pastures 1 and 2 are historic, annual spring use during wet conditions has influenced the rate of further improvement due to physical damage from hoof action and mechanical damage by livestock. Soils are in various stages of recovery although impaired soils continue to affect soil stability and the biological soil crust component, especially in interspatial areas.

The generally static and declining ground cover trend in pastures 1, 2, and 3 does not project improvement, especially when no rest and limited livestock grazing deferment have been practiced. With bare ground not improving and data indicating a general long-term downward trend, the ORMP objective to improve unsatisfactory and maintain satisfactory watershed health/condition has not been met.

The decreased ecological function and impaired soils indicate that soil and hydrologic function are compromised. Current and past livestock management is the primary contributing factor for not meeting Standard 1 and ORMP objectives for the Red Mountain allotment.

3.3.15.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷³

Standards 2 and 3 are making progress in the Red Mountain allotment. Four named streams traverse the pastures within the allotment (Bates, Pickett, Browns, and Hart Creeks). Approximately 12.7 miles have been assessed and 6.0 miles (47 percent) were most recently rated FAR, and 6.7 miles (53 percent) were most recently in PFC. Issues identified included: areas with inadequate soil moisture to support hydric species that stabilize stream banks, the presence of noxious weeds, upland species encroaching, and sheared and eroded stream banks.

Table RIPN-26: Red Mountain allotment riparian condition

Stream Name	Allotment & Pasture Stream Miles & Condition			Assessment Issues/ Impacts Identified	Total Miles
	Red Mountain- 01	Red Mountain- 02	Red Mountain- 03		
Bates Creek	1.4 (FARU-2001)			lack of species with roots capable of protecting stream banks/ understory of cheatgrass	1.4
	1.0 (FARS-2001)			presence of noxious weeds/ shift to early seral species typical of drier sites	1.0
		0.2 (FARS-2001)		portion of reach above that extends into pasture 2	0.2
Pickett Creek		1.2 (FARU-2001) 1.2 (FARU-2001) (PFC-2008) 1.5 (FARU-2001) (PFC-2008)		2001- lack of soil moisture to maintain hydric species/ noxious weeds present/ lack of bank stabilizing species/ portions with overwide channel 2008- armored with boulders and willows/ lacks understory	3.9
Brown's Creek			1.0 (FARS-2001)	lacks soil moisture and thus hydric species/ shift from deep-rooted hydric species to those species more suited to drier sites	1.0
			1.9 (FARS-2001) (PFC- 2008)	2001- lack of species composition with roots capable of protecting stream banks/ understory of cheatgrass 2008- abundance of willows, woody debris, and cobbles stream channel	1.9
Hart Creek			0.9 (FARS-2001) (PFC-2008) 1.2 (FARU-2001) (PFC-2008)	2001- overstory community typical of upland sites/ understory lacks hydric species/ existing root mass has poor stabilizing ability 2008- occurs in constrained canyon and is armored with bedrock/ lower portion incised	2.1

Standard 7 is not being met in the Red Mountain allotment, but the allotment is making progress toward meeting. For IDEQ water quality information associated with the Red Mountain allotment, see table RIPN-3. Based on IDEQ beneficial use information, Standard 7 is not being met based on sedimentation

¹⁷³ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Boone Peak (0589), Red Mountain (0588), Bridge Creek (0590), Quicksilver FFR (0483), and Stahle FFR (0641) Allotments* document in the project record or available from the Owyhee Field Office

and siltation which would be attributed to livestock. However, because BLM determined that the allotment is making progress toward meeting Standards 2 and 3, an assumption was made that the allotment is also making progress toward meeting Standard 7.

3.3.15.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.15.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Red Mountain allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013b).

Red Mountain consists of three pastures and two permittees have grazing authorizations within it. The allotment is dominated by shrub steppe habitats with salt desert shrub, native grassland, and juniper woodland components. Red Mountain allotment contains sage-grouse preliminary priority habitat in all three pastures.

Table WDLF-16: Focal habitats that are present on the Red Mountain allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Reduced abundance of deep-rooted perennial grasses
Riparian habitats Bates Creek Pickett Creek Browns Creek Hart Creek	Limiting	- Insufficient hydric vegetation to stabilize stream banks -Shift away from hydric vegetation - Lack of native understory vegetation
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	- Insufficient canopy cover and/or height of deep-rooted perennial grasses and forbs.

Pasture 1 contains three known leks and is used by sage-grouse during breeding, summer, and winter seasons (IDFG unpublished data). Sage-grouse habitat assessments indicate that pasture 1 lack sufficient canopy cover and heights from deep rooted perennial grasses and forbs to provide nesting, foraging, and escape cover for productive sage-grouse habitat.

Pasture 1 contains several intermittent stream valleys that may support early brood-rearing lotic habitats. In general, the limited riparian habitats available to and most likely used by sage-grouse are only providing marginal conditions for early brood rearing. The closed canopy of woody cover along Bates Creek and its location within a narrow, steep-sided draw may be limiting sage-grouse use although it is possible that these areas are supporting succulent herbaceous forage in the early spring.

Pasture 2 contains no leks but is used by sage-grouse during breeding, summer, and winter seasons. Sage-grouse habitat assessments indicate that pasture 2 has sufficient canopy cover but lacks sufficient heights from deep rooted perennial grasses and forbs to provide nesting, foraging, and escape cover for productive sage-grouse breeding habitat.

Pasture 2 contains perennial Pickett Creek and several intermittent stream valleys (including Little Hart Creek) that may support early brood-rearing lotic habitats. A majority of Pickett Creek was assessed as PFC. Little Hart Creek is an intermittent stream that has not been assessed for PFC. Both creeks may provide the forbs and cover necessary for early brood-rearing habitat. Pickett Creek contains redband trout. The majority of Pickett Creek was rated as PFC with large willows and boulders stabilizing the banks and shading and providing cover for redband trout.

Conditions along the majority of streams supporting riparian vegetation appear to be at least minimally adequate for dependent migratory birds. Although the herbaceous understory is lacking along some reaches of the assessed streams, woody species display diverse species and age-classes with multiple canopies which are providing structurally complex breeding, nesting, and foraging habitat for dependent species.

Pasture 3 contains no leks but is used by sage-grouse during breeding and summer seasons. Sage-grouse habitat assessments indicate that pasture 2 lacks sufficient canopy cover and height of deep rooted perennial grasses and forbs to provide nesting, foraging, and escape cover for productive sage-grouse breeding habitat.

Pasture 3 contains portions of Pickett, Hart, and Browns creeks which were assessed for PFC. Pickett Creek was rated as Functional at risk within pasture three but both Hart and Browns Creeks were rated as PFC. In general, the limited riparian habitats available to and most likely used by sage-grouse are only providing marginal conditions for early brood rearing. The closed canopy of woody cover and dense juniper stands along creeks may be limiting sage-grouse use although it is possible that some of these areas where openings occur are supporting succulent herbaceous forage in the early spring.

Pickett Creek contains redband trout but is providing less than optimal habitat because it is overwide and laterally unstable. This reduces the depth and shading of the water which results in higher temperatures and lower quality habitat.

Red Mountain allotment is not meeting Standard 8 and current livestock practices are a significant factor. The presence of invasive juniper and cheatgrass are also factors for not meeting Standard 8.

3.3.15.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.15.1.7 Cultural Resources

None of the 19 previously recorded cultural sites within the Red Mountain allotment are within a 100-meter vicinity of the five identified potential livestock congregation areas. BLM staff surveyed all of the congregation areas, but recorded no new sites. Staff also monitored site 10OE934, a prehistoric location cited on the original report as being “heavily used by cattle,” but this condition had not been substantiated five years later during a monitoring visit. A July 2013 monitoring visit found the site crossed by a road, littered with trash and has had tree felling, however, BLM personnel found only minor trampling with trails less than 5 centimeters deep. There are no livestock impacts which would affect the site’s NRHP eligibility.

3.3.15.2 Red Mountain Allotment Environmental Consequences

3.3.15.2.1 Alternative 1

3.3.15.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting reduction of active AUMs authorized in the existing permits from 1,999 to 1,721. In addition, grazing use would be authorized in pasture 3 during the late fall and early winter (10/15 to 12/30).

Standard 4 was not met in pasture 3 of the Red Mountain allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. At the same time, although Standard 4 was not met in pastures 1 and 2, significant progress was made.

Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with annual scheduled growing season use in pasture 3 of the allotment (Appendix E). In addition, early season scheduled use of pastures 1 and 2 that have salt desert shrub and Wyoming big sagebrush vegetation communities that receive less than 13 inches of average annual effective precipitation have limited resilience to disturbance factors. Limited soil moisture after movement of cattle off these pastures following spring use limits regrowth and the completion of the annual growth cycle before summer dormancy. The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use of pasture 3 during the active growing season resulting in utilization levels in the light to moderate level and early season grazing of pastures 1 and 2 with their limited resilience to grazing impacts would continue to limit improvement in upland condition and trend.

Under Alternative 1, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season in pasture 3. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.15.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.15.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.15.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.15.1), pasture 1 of the Red Mountain allotment would be available for grazing during the spring and fall annually. Pastures 2 and 3 would be open during the spring annually (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 6.7 miles of perennial stream, and 33.2 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring

months, and pasture 3 has been used during both spring and fall; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Red Mountain allotment is not meeting the Standards associated with the riparian-wetland resources, but is making progress toward meeting. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. However, progress would continue to be made in the riparian area condition. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.15.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1 current livestock practices would continue and current conditions for wildlife would be expected to continue. Uplands would continue to lack deep-rooted perennial grasses to provide forage and cover for shrub steppe dependent species.

Riparian habitat

Riparian habitats would continue to lack sufficient hydric vegetation to stabilize stream banks. Stream channels would remain unstable and banks would be at risk of erosion. Reduced vegetation cover would continue to provide limited habitat for riparian dependent species.

Sage-grouse habitat

Sage-grouse habitat would continue to have reduced cover and forage for nesting and brood rearing. Nest success and brood survival would continue to be reduced in the Red Mountain allotment. Riparian habitat would continue to provide only limited herbaceous forage for sage-grouse during the summer brooding season. Under Alternative 1 Red Mountain allotment would not make progress toward meeting Standard 8.

3.3.15.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.15.2.1.7 Cultural Resources

There are no recorded sites adversely affected by livestock grazing in the allotment. No known historic properties would be affected by this alternative.

3.3.15.2.2 Alternative 2

3.3.15.2.2.1 Alternative 2 Fossil Creek

3.3.15.2.2.1.1 Vegetation

Under Alternative 2, pasture 1 of the existing Red Mountain allotment would be divided from the other two pastures and a new one-pasture allotment named the Fossil Creek allotment would be created.

Under Alternative 2, the permittees made application to maintain active authorized use at 775 AUMs and to implement a grazing schedule the same as that implemented recently. Grazing use would be scheduled in the fall and winter for one operator. At the same time, flexibility would be provided to allow grazing at all seasons of the year for the other operator. While the scheduled fall and winter use by the first operator

is outside the active growing season and would have limited impacts to vegetation resources due to the season of use, the flexibility to annually graze cattle within the created one-pasture Fossil Creek allotment at any time of the year removes limitations to avoid annual use during the active growing season for cool-season bunchgrass species.

While Standard 4 was not met in the created one-pasture allotment, significant progress was made. Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur in the event that annual growing season use occurred with the flexibility proposed (Appendix E). In addition, early season scheduled use of allotment that has salt desert shrub and Wyoming big sagebrush vegetation communities that receive less than 13 inches of average annual effective precipitation would increase risk in a pasture with limited resilience to disturbance factors. Limited soil moisture after movement of cattle off this pastures following spring use limits regrowth and the completion of the annual growth cycle before summer dormancy. The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season resulting in utilization levels in the light to moderate level would limit improvement in upland condition and trend with inappropriate use of flexibility proposed.

Under Alternative 2, progress toward meeting Standard 4 would not continue in the event that flexibility proposed in inappropriately applied and frequent grazing use occurs during the active growing season and at elevated intensities. Additionally, the ORMP objective to improve health and condition of vegetation would not be met with inappropriate application of flexibility proposed.

3.3.15.2.2.1.2 Soils

Under Alternative 2, Red Mountain pasture 1 would convert to the newly configured single-pasture Fossil Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Under Alternative 2, livestock grazing in the one-pasture Fossil Creek allotment could occur year-round at the discretion of one of the permittees and, even if annual grazing would take place over a shorter period, would extend the season of use from fall to late winter and likely also include spring as it has in the past for pasture 1. While a reduction in active AUMs would be applied, yearly physical impacts during the wettest and most susceptible period are expected to continue and repetitive growing season use would not contribute to increase the ability of native plant communities to provide for soil stability in the absence of a defined grazing schedule and rotation. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to the current condition.

3.3.15.2.2.1.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.1 and 2.4.15.1), the Fossil Creek (formerly pasture 1 of Red Mountain) allotment would be available for grazing year-round annually, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 16.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the spring months; the riparian Standards are not being met, but progress is being made.

Under current management, the Fossil Creek allotment is not meeting the Standards associated with the riparian-wetland resources, but is making progress toward meeting. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. However, progress would continue to be made in the riparian area condition.

3.3.15.2.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.2.1.5 Wildlife and Special Status Animals

Under Alternative 2, pasture 1 of the Red Mountain allotment would become Fossil Creek allotment. Fossil Creek allotment would likely be grazed at similar times and intensities as has occurred under the current grazing management. Therefore the impacts to Fossil Creek allotment would remain the same. Uplands would continue to lack sufficient canopy cover and heights from deep rooted perennial grasses and forbs to provide nesting, foraging, and escape cover for productive sage-grouse habitat. Riparian habitats would remain of limited use to sage-grouse but would still provide some level of habitat for migratory birds and other riparian dependent species.

3.3.15.2.2.1.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 2, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 340 more than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. However, there would be 1,067 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the ranchers could bring in more revenue from the sale of more animals, but they could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.2.1.7 Cultural Resources

There are no recorded cultural sites within the proposed allotment and there are no identified potential livestock congregation areas. The effects to historic properties would be the same as Alternative 1.

3.3.15.2.2.2 Alternative 2 Pickett Creek

3.3.15.2.2.2.1 Vegetation

Under Alternative 2, pastures 2 and 3 of the existing Red Mountain allotment would be combined with the one pasture Bridge Creek allotment and the one-pasture Boone Peak allotment to create the new four-pasture Pickett Creek allotment.

Under Alternative 2, the permittee made application to maintain active authorized use at 3,982 AUMs, equal to the existing authorizations in the Bridge Creek, Boone Peak, and portions of the Red Mountain that compose the proposed Pickett Creek allotment. In addition, the permittee proposed a grazing schedule with flexibility to annually graze cattle within all four pastures of the Pickett Creek allotment at any time of the year.

Standard 4 was met in pasture 4 of the Pickett Creek allotment; Standard 4 was not met in pasture 1, but the allotment is making significant progress; Standard 4 was not met in pasture 3 due to altered fire regimes and juniper encroachment into sagebrush steppe vegetation communities, and Standard 4 was not met in pasture 2 due to current livestock management practices. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages.

Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur in the event that annual growing season use occurred with the flexibility proposed (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected

to be reduced with fewer AUMs authorized (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season resulting in utilization levels in the light to moderate level would limit improvement in upland condition and trend with inappropriate use of flexibility proposed.

Under Alternative 2, progress toward meeting Standard 4 would not continue in the event that flexibility proposed in inappropriately applied and frequent grazing use occurs during the active growing season and at intensities in excess of the slight category (20 percent maximum). Additionally, the ORMP objective to improve health and condition of vegetation would not be met with inappropriate application of flexibility proposed.

3.3.15.2.2.2.2 Soils

Under Alternative 2, Red Mountain pastures 2 and 3, as well as Bridge Creek and Boone Peak allotments would convert to the newly configured four-pasture Pickett Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Under Alternative 2, livestock grazing in the Pickett Creek allotment would occur year-round in all four pastures at the discretion of the permittee and would be similar to Alternative 1. In the absence of a defined grazing schedule, physical impacts during the wettest and most susceptible period are expected to continue and repetitive growing season use would not contribute to increase the ability of native plant communities to provide for soil stability. This would particularly affect pastures 1 and 3, which are not meeting for watershed health. In pasture 3, soils would also continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to the current condition (see Section 3.2.2.3).

3.3.15.2.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.1 and 2.4.15.1), the Pickett Creek allotment (formerly pastures 2 and 3 of Red Mountain, Boone Peak, and Bridge Creek) would be available for grazing year-round annually, without deferment or rest (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 10.8 miles of perennial stream, 35.6 miles of intermittent/ ephemeral stream, and six springs would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the pastures 1 and 2 of the allotment have primarily been used during the spring and fall months; and pastures 3 and 4 have been used during the summer and fall months. Currently, within pastures 1, 2, and 4, the riparian Standards are not being met, but progress is being made; and within pasture 3, the Standards are not being met.

Under current management, the Pickett Creek allotment is not meeting the Standards associated with the riparian-wetland resources; but in three of the pastures (1, 2, and 4), progress is being made toward meeting. Since the allotment would be used during the same seasons and under the same terms as the current permit, it would continue to not meet the riparian-wetland Standards under this alternative. Additionally, the alternative proposes a 21 percent increase in active AUMs compared to the current situation. Therefore, the riparian areas would have additional impacts under this alternative, and the riparian Standards would not be met.

3.3.15.2.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.2.2.5 Wildlife and Special Status Animals

Under Alternative 2 the permittee requests complete flexibility in the grazing schedule. With this flexibility the permittee would be allowed to graze any or all pastures at any time of the year. With this flexibility the permittee could implement a grazing program that would allow all pasture within the Pickett Creek allotment to make progress toward or continue to meet Standard 8. However this flexibility would also allow the permittee to implement a grazing program that would result in none of the pastures making progress toward meeting Standard 8. In order to analyze the potential impacts to wildlife habitats it is necessary to assume that each pasture could be grazed every year during critical seasons for wildlife.

Pickett Creek contains preliminary priority habitat for sage-grouse for breeding, summer, and winter use. It also contains riparian habitats that support redband trout, sage-grouse, migratory birds and other dependent wildlife species. If this pasture were grazed yearly between April 1 and September 30, the following impacts would be observed:

1. Cattle could disturb sage-grouse on leks and nests. This can result in predation and nest abandonment which equates to lower reproductive success and smaller population. This effect is expected to be minimal.
2. Perennial grasses and forbs would be grazed during the critical brook stage which results in reduced vigor, reproduction, and seedling establishment. Fewer and less vigorous grasses and forbs mean less cover and forage available to sage-grouse. This results in lower survival and reproduction of sage-grouse.
3. Cattle could potentially trample redds from spawning redband trout which could result in lower recruitment to the local population.
4. During the hottest part of the year cattle would spend much of their time in riparian areas. Heavy grazing in the riparian areas would result in decreased woody and herbaceous vegetation and increased bank alteration from trampling. Reduced cover in riparian habitats allows increased sunlight to penetrate and increased evaporation and raises temperatures. Drier and warmer riparian habitats are less suitable for redband trout or spotted frogs and produce less herbaceous vegetation for sage-grouse during the summer season.
5. Fewer and less vigorous perennial grasses and forbs in the uplands combined with more open, drier, and less productive riparian habitats results in less diverse habitats that are suitable to fewer species of migratory birds.

Under Alternative 2 Pickett Creek allotment would not make progress toward meeting Standard 8.

3.3.15.2.2.2.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 2, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 340 more than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. However, there would be 1,067 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the ranchers could bring in more revenue from the sale of more animals, but they could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.2.2.7 Cultural Resources

The effects to cultural resources for pastures 1 and 2 are discussed in Section 3.3.15.1.7 for the Red Mountain allotment. The effects for pasture 3 are covered in Section 3.3.4.1.7 for the Bridge Creek

allotment and in Section 3.3.2.1.8 Boone Peak allotment for pasture 4. The effects to historic properties would be the same as Alternative 1.

3.3.15.2.3 Alternative 3

3.3.15.2.3.1 Alternative 3 Fossil Creek

3.3.15.2.3.1.1 Vegetation

Under Alternative 3, pasture 1 of the existing Red Mountain allotment would be divided from the other two pastures and a new one-pasture allotment named the Fossil Creek allotment would be created.

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 1 of 3 years. Additionally, a reduction in the number of AUMs authorized from approximately 724 in the existing pasture 1 of the Red Mountain allotment to 355 in the proposed Fossil Creek allotment (the same one pasture) under Alternative, resulting in a stocking rate of approximately 10 acres per AUM, would result in a reduction in the intensity of grazing use occurring in the pasture. The reduced intensity of grazing use, especially when that use is scheduled to occur during a period immediately preceding the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during or immediately preceding the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.15.2.3.1.2 Soils

Under Alternative 3, Red Mountain pasture 1 would convert to the newly configured single-pasture Fossil Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period while deferment from critical growing season use would be in place over the same timeframe. Alternative 3 also defines grazing periods and would not leave the season of use open for one of the permittees. In addition, an adjustment in stocking rate would result in a reduction of livestock numbers and active AUMs that would benefit soils by limiting physical impacts from hoof action and utilization of plants, and would increase the overall ability of native plant communities to remain healthy, vigorous, and productive during active growth. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.15.2.3.1.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.15.3), the Fossil Creek (formerly pasture 1 of Red Mountain) allotment would be available for grazing during the fall and winter annually, and during the spring 2 out of 3 years of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 16.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B) indicates that the allotment has primarily been used during the spring months; the riparian Standards are not being met, but progress is being made.

Under current management, the Fossil Creek allotment is not meeting the Standards associated with the riparian-wetland resources, but is making progress toward meeting. The allotment would be managed under a defined 3-year rotation that incorporates at least one year of riparian area constraint period deferment. Additionally, the alternative proposes to cap the cattle number and active AUMs which would result in a 45 percent reduction in active AUMs. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration) that would reduce impacts associated with the riparian areas condition. Monitoring would be required during the years when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Thus, the allotment would meet the riparian-wetland Standards under this alternative.

3.3.15.2.3.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.3.1.5 Wildlife and Special Status Animals

Under Alternative 3 the Fossil Creek allotment would be created, active AUMs would be reduced by about half compared to Alternative 2 and a 3-year grazing schedule would be established. Grazing would not occur between May 1 and September 30 on any year. Grazing would be restricted to the early spring or late fall winter.

Upland habitat

This would allow upland habitats to pass through their entire growth and reproduction cycle without disturbance from livestock. Plants that are un-grazed during their active growing season would grow taller and produce more seed. The abundance and vigor of perennial grasses and forbs in the uplands habitats would increase. This would result in increased cover and forage for shrub steppe dependent species.

Riparian habitat

This would allow riparian habitats to pass through their entire growth and reproduction cycle without disturbance from livestock. Plants that are un-grazed during their active growing season would grow taller and produce more seed. The abundance and vigor of woody and herbaceous species in the riparian habitats would increase. This would result in increased cover and forage for riparian dependent species.

Sage-grouse habitat

More vigorous perennial grasses and forbs and woody and herbaceous riparian vegetation would increase the cover and forage available for sage-grouse during the breeding and summer brooding seasons. Increased cover and forage would increase the nest success and brood survivorship.

Under this alternative Fossil Creek allotment would progress toward meeting Standard 8.

3.3.15.2.3.1.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 3, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 2,595 fewer than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. There would also be 956 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the ranchers could bring in less revenue from the sale of fewer animals and could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.3.1.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.15.2.3.2 Alternative 3 Pickett Creek

3.3.15.2.3.2.1 Vegetation

Under Alternative 3, Pastures 2 and 3 of the existing Red Mountain allotment would be combined with the one pasture Bridge Creek allotment and the one-pasture Boone Peak allotment to create the new four-pasture Pickett Creek Allotment.

Standard 4 was met in pasture 4 of the Pickett Creek allotment; Standard 4 was not met in pasture 1, but making significant progress; Standard 4 was not met in pasture 3 due to altered fire regimes and juniper encroachment into sagebrush steppe vegetation communities; and Standard 4 was not met in pasture 2 due to current livestock management practices. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages.

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 in pastures 1 and 2; 5/1 to 7/15 in pastures 3 and 4) in 1 of 3 years. The intensity of grazing use would also be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30 or 7/15 as applicable. Additionally, a reduction in the AUMs authorized within the allotment under Alternative 3 results in a stocking rate of approximately 10 acres per AUM for the two lower elevation pastures and approximately 5 acres per AUM for the two high elevation pastures. These actions would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Under Alternative 3, progress toward meeting Standard 4 would occur as a result of limitations to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 4 in pasture 3. Additionally, the ORMP objective to improve health and condition of vegetation would be met.

3.3.15.2.3.2.2 Soils

Under Alternative 3, Red Mountain pastures 2 and 3, as well as Bridge Creek and Boone Peak allotments would convert to the newly configured four-pasture Pickett Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Alternative 3 would provide a minimum of 1 out of 3 years of deferment and rest from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from a minimum of 1 out of 3 years of deferment from critical growing season use. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper in pasture 3. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.15.2.3.2.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.1 and 2.4.15.1), the Pickett Creek (formerly pastures 2 and 3 of Red Mountain, Boone Peak, and Bridge Creek) allotment would be available for grazing during combinations of spring, summer, fall, and rest with at least one year out of three years of growing season deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 10.8 miles of perennial stream, 35.6 miles of intermittent/ ephemeral stream, and six springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing alternately among the pastures and years. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring and fall months; and pastures 3 and 4 have been used during the summer and fall months. Currently, within pastures 1, 2, and 4, the riparian Standards are not being met, but progress is being made; and within pasture 3, the Standards are not being met.

Under current management, the Pickett Creek allotment is not meeting the Standards associated with the riparian-wetland resources; but in three of the pastures (1, 2, and 4), progress is being made toward meeting. The allotment would be managed under a defined 3-year grazing schedule that incorporates at least 1 in 3 years of riparian area constraint period deferment. The changes in season of use would result in a 63 percent reduction in active AUMs over the 10 year permit. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration) that would reduce impacts associated with the riparian areas condition. Monitoring would be required within pasture 4 during the years when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would meet the riparian-wetland Standards under this alternative.

3.3.15.2.3.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.3.2.5 Wildlife and Special Status Animals

Under Alternative 3 active AUMs would be reduced by about 60 percent compared to Alternative 2, and a 3-year rotation schedule would be implemented.

Pasture 1 would receive a full year of rest 1 in 3 years and would not be grazed after May 31 on any year. Utilization limits would be established on the upland habitats since grazing would occur during the early part of the active growing season in 2 of 3 years. Utilization limits are intended to prevent excessive vigor and reproductive capability loss in perennial grasses and shrubs when grazing occurs during the active growing season. The one full year of rest would allow perennial grasses and forbs to maintain vigor and complete their lifecycle without disturbance from grazing 1 in 3 years. The rest and utilization limits would allow for the recommended levels of canopy cover and plant height for perennial grasses and forbs that are required for productive sage-grouse nesting, brooding, and foraging habitats.

Pickett Creek and other riparian habitats within pasture 1 would not be grazed between July 1 and September 30. Woody and herbaceous species would increase in vigor and reproductive capability. Riparian habitats would expand and increase in complexity. This would provide more shading for redband trout and would increase the abundance of foraging, nesting, and escape habitats for migratory birds and other riparian dependent species.

Pasture 2 would receive a full year of rest 1 in 3 years. In the other 2 years grazing would occur between June 1 and July 14 and between April 21 and May 31, respectively. Utilization limits are intended to prevent excessive vigor and reproductive capability loss in perennial grasses and shrubs when grazing occurs during the active growing season. The one full year of rest would allow perennial grasses and

forbs to maintain vigor and complete their lifecycle without disturbance from grazing 1 in 3 years. The rest and utilization limits would allow for the recommended levels of canopy cover and plant height for perennial grasses and forbs that are required for productive sage-grouse nesting, brooding, and foraging habitats. One year of complete rest coupled with utilization, stubble height, and bank alteration limits would allow riparian habitats to maintain vigor and extent. This would continue to provide adequate foraging, nesting, and escape habitats for redband trout, spotted frog, sage-grouse, and other riparian dependent species.

Pasture 3 would receive a full year of rest 1 in 3 years. In the other two years grazing would occur between June 1 and July 14. Utilization limits are intended to prevent excessive vigor and reproductive capability loss in perennial grasses and shrubs when grazing occurs during the active growing season. The one full year of rest would allow perennial grasses and forbs to maintain vigor and complete their lifecycle without disturbance from grazing 1 in 3 years. The rest and utilization limits would allow for the recommended levels of canopy cover and plant height for perennial grasses and forbs that are required for productive sage-grouse nesting, brooding, and foraging habitats. However pasture 3 has areas of severe juniper encroachment which may limit the ability of perennial grasses and forbs to maintain or increase vigor and abundance. Juniper encroachment may be limiting sage-grouse use in this pasture because of reduced visibility, reduced shrub and grass cover and reduced forage.

One year of complete rest coupled with utilization, stubble height, and bank alteration limits would allow riparian habitats to maintain vigor and extent. This would continue to provide adequate foraging, nesting, and escape habitats riparian dependent species.

Pasture 4 would be grazed between July 15 and October 31 2 of 3 years and between October 1 and October 31 the third year. No grazing would occur during the active growing season for perennial grasses and forbs in the uplands. This would allow perennial grasses and forbs to maintain vigor and complete their lifecycle without disturbance from grazing. Canopy cover, height, and abundance for perennial grasses and forbs would be maintained and continue to provide the necessary nesting, brooding, and foraging components for productive sage-grouse habitat. Juniper encroachment may be limiting sage-grouse use in this pasture because of reduced visibility, reduced shrub and grass cover and reduced forage.

Riparian habitats would not be grazed between July 1 and September 30 in 1 of 3 years. One year without grazing during the hottest portion of the year combined with utilization, stubble height, and bank alteration limits would allow riparian habitats to maintain vigor and extent. This would continue to provide adequate foraging, nesting, and escape habitats for redband trout, spotted frog, sage-grouse, and other riparian dependent species.

Under Alternative 3 the Pickett Creek allotment would make progress toward meeting Standard 8 in each of its pastures.

3.3.15.2.3.2.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 3, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 2,595 fewer than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. There would also be 956 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the

ranchers could bring in less revenue from the sale of fewer animals and could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.3.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.15.2.4 Alternative 4

3.3.15.2.4.1 Alternative 4 Fossil Creek

3.3.15.2.4.1.1 Vegetation

Under Alternative 4, pasture 1 of the existing Red Mountain allotment would be divided from the other two pastures and a new one-pasture allotment named the Fossil Creek allotment would be created.

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. Additionally, a reduction in the number of AUMs authorized from approximately 724 in the existing pasture 1 of the Red Mountain allotment to 355 in the proposed Fossil Creek allotment (the same one pasture) under Alternative, resulting in a stocking rate of approximately 10 acres per AUM, would result in a reduction in the intensity of grazing use occurring in the pasture. The reduced intensity of grazing use, especially when that use is scheduled to occur during a period immediately preceding the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during or immediately preceding the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.15.2.4.1.2 Soils

Under Alternative 4, Red Mountain pasture 1 would convert to the newly configured single-pasture Fossil Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Alternative 4 would provide 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period while deferment from critical growing season would be in place over the same timeframe. In addition, an adjustment in stocking rate would result in a reduction of livestock numbers and active AUMs that would benefit soils by limiting physical impacts from hoof action and utilization of plants. This would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.15.2.4.1.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.3 and 2.4.15.3), the Fossil Creek (formerly pasture 1 of Red Mountain) allotment would be available for grazing during the fall and winter annually, and during the spring 2 out of 3 years of a 3-year rotation (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 16.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Recent actual use reported (Appendix B)

indicates that the allotment has primarily been used during the spring months; the riparian Standards are not being met, but progress is being made.

Under current management, the Fossil Creek allotment is not meeting the Standards associated with the riparian-wetland resources, but is making progress toward meeting. The allotment would be managed under a defined 3-year rotation that incorporates at least two years of riparian area constraint period deferment. Additionally, the alternative proposed to cap the cattle number and active AUMs which would result in a 45 percent reduction in active AUMs. Thus, the allotment would meet the riparian-wetland Standards under this alternative.

3.3.15.2.4.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.4.1.5 Wildlife and Special Status Animals

Under Alternative 4 the Fossil Creek allotment would be created, active AUMs would be reduced by about half compared to Alternative 2 and a 3-year grazing schedule would be established. Grazing would not occur between May 1 and September 30 on any year. Grazing would be restricted to the early spring or late fall winter. This would allow upland and riparian habitats to pass through their entire growth and reproduction cycle without disturbance from livestock. Plants that are un-grazed during their active growing season would grow taller and produce more seed. The abundance and vigor of perennial grasses and forbs in the uplands and woody and herbaceous species in the riparian habitats would increase. This results in increased cover and forage for sage-grouse and other shrub steppe or riparian dependent species. Under this alternative Fossil Creek allotment would progress toward meeting Standard 8.

3.3.15.2.4.1.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 3, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 3,626 fewer than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. There would also be 1,097 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the ranchers could bring in less revenue from the sale of fewer animals and could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.4.1.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.15.2.4.2 Alternative 4 Pickett Creek

3.3.15.2.4.2.1 Vegetation

Under Alternative 4, pastures 2 and 3 of the existing Red Mountain allotment would be combined with the one-pasture Bridge Creek allotment and the one-pasture Boone Peak allotment to create the new four-pasture Pickett Creek allotment.

Standard 4 was met in pasture 4 of the Pickett Creek allotment; Standard 4 was not met in pasture 1, but making significant progress; Standard 4 was not met in pasture 3 due to altered fire regimes and juniper encroachment into sagebrush steppe vegetation communities; and Standard 4 was not met in pasture 2 due

to current livestock management practices. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages.

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30 in pastures 1 and 2; 5/1 to 7/15 in pastures 3 and 4) in 2 of 3 years. This action results in two full years of rest of pastures 1, 2, and 3. In addition, the intensity of grazing use would be limited by a reduction in the AUMs authorized within the allotment from approximately 3,982 under the current permit to 436 under Alternative 4, resulting in a stocking rate of approximately 10 acres per AUM for the two lower elevation pastures and at approximately 5 acres per AUM for the two high elevation pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 2 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Under Alternative 4, progress toward meeting Standard 4 would occur as a result of limitations to seasons and intensities of grazing use, although juniper encroachment would continue to limit meeting Standard 4 in pasture 3. Additionally, the ORMP objective to improve health and condition of vegetation would be met.

3.3.15.2.4.2.2 Soils

Under Alternative 4, Red Mountain pastures 2 and 3, as well as Bridge Creek and Boone Peak allotments would convert to the newly configured four-pasture Pickett Creek allotment (see Section 2.4.15, 3.1.2, and 3.2.2.1).

Alternative 4 would provide 2 out of 3 years of rest from spring grazing in pastures 1, 2, and 3, and yearly deferment in pasture 4. This would reduce physical impacts to soils during the wettest and most susceptible period. Under the same rotation schedule, rest and deferment from critical growing season use would provide native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Subsequently, livestock numbers, active AUMs, and stocking rates would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper in pasture 3. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.15.2.4.2.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.1 and 2.4.15.1), the Pickett Creek (formerly pastures 2 and 3 of Red Mountain, Boone Peak, and Bridge Creek) allotment would be available for grazing during combinations of spring, summer, fall, and rest with at least one year out of three years of growing season deferment (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 10.8 miles of perennial stream, 35.6 miles of intermittent/ ephemeral stream, and six springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing alternately among the pastures and years. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring and fall months; and pastures 3 and 4 have been used during the summer and fall months. Currently, within pastures 1, 2, and 4, the riparian

Standards are not being met, but progress is being made; within pasture 3, the Standards are not being met.

Under current management, the Pickett Creek allotment is not meeting the Standards associated with the riparian-wetland resources; but in three of the pastures (1, 2, and 4), progress is being made toward meeting. The allotment would be managed under a defined 3-year grazing schedule that incorporates at least 2 in 3 years of riparian area constraint period deferment and/or rest. The changes in season of use would result in an 89 percent reduction in active AUMs over the 10 year permit. Therefore, the allotment would meet the riparian-wetland Standards and meet the ORMP objectives under this alternative.

3.3.15.2.4.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.4.2.5 Wildlife and Special Status Animals

Under Alternative 4 active AUMs would be reduced by almost 90 percent compared to Alternative 2, and a 3-year grazing schedule would be established.

Pastures 1, 2, and 3 would receive two full years of rest every three years and the third year they would be grazed between April 21 and June 30. This would allow them to complete their yearly growth and reproduction cycles without disturbance from livestock 2 of 3 years. Grazing during the active growing season can reduce the vigor and reproductive capability of perennial grasses and forbs however the two years of complete rest would allow for maintenance and recovery of these species. Perennial grasses and forbs would increase vigor, reproduce, and establish seedlings which would maintain or achieve the necessary nesting and hiding cover and forage base to provide productive habitat for shrub steppe dependent species like sage-grouse and migratory birds. Juniper encroachment that is occurring in pastures 2 and 3 appears to be limiting sage-grouse habitat because of reduced visibility, reduced shrub and grass cover and reduced forage. Reduced grazing intensity would result in additional residual perennial grass cover to hide sage-grouse nests in the early spring.

Riparian areas would be completely rested 2 of 3 years and would not be grazed during the hottest part of the year in year three which would reduce the amount of time livestock spend foraging and hanging in them. This would allow for maintenance of the existing riparian habitats and possible further development and expansion of hydric vegetation. This would increase the structural complexity and forage base of the habitat which would increase the number of riparian dependent species that would forage and reproduce within pasture 4. Increased structural complexity and extent of riparian habitats would increase the shading and stability of stream channels which would continue to provide adequate habitat for redband trout and other aquatic species.

Pasture 4 would be grazed October 1-31 every year. Pasture 4 would not be grazed during the active growing season for upland perennial grasses and forbs. This would allow them to complete their yearly growth and reproduction cycles without disturbance from livestock. Grazing after the active growing season has a minimal effect on the vigor and reproduction of perennial grasses and forbs in the following year. Perennial grasses and forbs would maintain vigor, reproduce, and establish seedlings which would maintain the necessary nesting and hiding cover and forage base to provide productive habitat for shrub steppe dependent species like sage-grouse and migratory birds. Juniper encroachment may be limiting sage-grouse use in this pasture because of reduced visibility, reduced shrub and grass cover and reduced forage.

Riparian areas would not be grazed during the hottest part of the year which would reduce the amount of time livestock spend foraging and hanging in them. This would allow for maintenance of the existing

riparian habitats and possible further development and expansion of hydric vegetation. This would increase the structural complexity and forage base of the habitat which would increase the number of riparian dependent species that would forage and reproduce within pasture 4. Increased structural complexity and extent of riparian habitats would increase the shading and stability of stream channels which would continue to provide adequate habitat for redband trout and other aquatic species.

Under Alternative 4 the Pickett Creek allotment would meet or make progress toward meeting Standard 8 in all pastures. The reduction in AUMs for Alternative 4 would increase the rate of progress toward meeting Standard 8.

3.3.15.2.4.2.6 Social and Economic Values

See Section 3.1.8 above. Pasture 1 of the Red Mountain allotment would be converted to the proposed Fossil Creek allotment in this alternative. The other Red Mountain allotment pastures would be combined with the Boone Peak and Bridge Creek allotments to create the proposed Pickett Creek allotment. In Alternative 4, the total AUMs for the Fossil Creek and Pickett Creek allotments combined would be 3,626 fewer than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. There would also be 1,097 fewer cattle in the Fossil Creek and Pickett Creek allotments combined than in the Red Mountain, Boone Peak, and Bridge Creek allotments combined in Alternative 1. Thus, the ranchers could bring in less revenue from the sale of fewer animals and could incur additional labor and feed costs from the reduced AUMs and the changes in pasture management.

3.3.15.2.4.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.15.2.5 Alternative 5

3.3.15.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.15.2.5.2 Soils

Alternative 5 – Red Mountain and Fossil Creek Allotments

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

Alternative 5 – Pickett Creek Allotment

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper in pasture 3. Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the fastest progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.15.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.15.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.15.2.5.5 Wildlife and Special Status Animals

Under this alternative both riparian and upland habitats would be rested from grazing completely for 10 years. Upland habitat would continue to provide productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. Juniper encroachment would continue in the uplands and would eventually decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that provide improved habitat for riparian dependent species such as the sage-grouse, redband trout, and spotted frog. Under this alternative the riparian habitats would make progress toward meeting Standard 8.

3.3.15.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.15.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.16 Stahle FFR Allotment

3.3.16.1 Stahle FFR Allotment Affected Environment

3.3.16.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-50 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Stahle FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-50: Ecological sites mapped for the Stahle FFR allotment

Ecological Site	Dominant Species Expected	BLM acres
¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	1
¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	49
¹⁻² MAHOGANY SAVANNA 16-22 CELE3-SYOR2/FEID-ACHNA	curl-leaf mountain mahogany- mountain snowberry;	24

Ecological Site	Dominant Species Expected	BLM acres
	Idaho fescue-needlegrass	
¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	13
Stahle FFR total acres		87

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-50 above, the vegetation inventory for the Stahle FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-51 is a summary of ecological condition within the Stahle FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-52: Ecological condition for public lands in Stahle FFR allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Stahle FFR Allotment (0641)	40%	60%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; a similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Stahle FFR allotment.

Additionally, current vegetation in the Stahle FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-53.

Table VEG-53: Current vegetation in the Stahle FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	0	0%
ASPEN	0	0%
BIG SAGE	19	3%

Vegetation Cover Type	Acres	Percent of Allotment
BIG SAGE MIX	65	9%
BITTERBRUSH	0	0%
BUNCHGRASS	2	0%
CONIFER	34	5%
EXOTIC ANNUAL	2	0%
GREASEWOOD	0	0%
JUNIPER	304	42%
LOW SAGE	29	4%
MOUNTAIN BIG SAGE	151	21%
MOUNTAIN SHRUB	77	11%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	42	6%
UNKNOWN/NO DATA	0	0%
Total:	725	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-52 and VEGE-53. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Stahle FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain shrubs, mountain big sagebrush, or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory (Table VEG-2). Ecological site descriptions for the Stahle FFR allotment identify that juniper has the potential to invade most sites.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in the Stahle FFR allotment, with the overall moderate departure of biotic integrity from reference site conditions for a mountain big sagebrush vegetation community. The loss of deep-rooted native perennial bunchgrass species with increased dominance by cheatgrass and accompanied by increasing juniper dominance contribute to the failure to meet the standard. Altered natural fire regimes that would periodically reduce juniper dominance and historic livestock management practices are the causal factors for failure to meet the standard. Current spring and fall grazing with a short duration are not likely to impact native perennial bunchgrass health and vigor. No vegetation trend data are available for the Stahle FFR allotment, precluding a conclusion about whether the Owyhee Resource Management Plan objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has been met.

To summarize, the Stahle FFR allotment is not meeting Standard 4 due to historic livestock management practices and altered fire regimes leading to juniper encroachment into sagebrush steppe vegetation communities. A conclusion if the ORMP objective to improve vegetation health/condition cannot be

reached in the absence of trend data. Recent reported grazing that is limited to either the spring or fall is a practice that should not limit progress toward meeting the ORMP vegetation objective.

3.3.16.1.2 Soils

Standard 1 is met in the Stahle FFR allotment with watershed indicators showing little departure from expected conditions for the ecological site. Soil and hydrologic function-related indicators are primarily none-to-slight and reflect stable soils with abundant gravel in place to reduce erosion potential. The biotic integrity, however, shows a departure from reference site conditions so that watershed health is considered to be at risk.

Much of the decline in biotic function can be associated with a change in deep-rooted bunchgrasses, like bluebunch wheatgrass, to more shallow-rooted species, such as Sandberg bluegrass. The lack of species diversity and the localized invasion of Western juniper have been the result of past livestock grazing management and altered natural fire regimes that would periodically reduce juniper dominance.

Despite the departure of biotic integrity, soils have remained stable and intact, erosion relics are weakly defined to absent, and bare ground is minimal. While indicators of hydrologic function associated with litter amount and infiltration show some departure, overall soil and hydrologic integrity and their associated attributes are still maintained. Standard 1 is being met but soils are considered to be at risk due to declining biotic conditions.

3.3.16.1.3 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.16.1.4 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Stahle FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013b).

The Stahle FFR allotment is used as a short term holding pasture usually for a week or less in each the spring and fall. The Stahle FFR allotment consists of one pasture that is dominated by sagebrush steppe habitats with severe juniper encroachment. No Riparian habitats occur on public land within the Stahle FFR allotment. Juniper encroachment is a primary causal factor for the Stahle FFR allotment not meeting Standard 8 for wildlife in upland habitats.

Table WDLF-17: Focal habitats that are present on the Stahle FFR allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Absence of deep-rooted perennial grasses - Severe juniper encroachment
Riparian habitats	Not applicable	- No riparian habitat occurs

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Sage-grouse Preliminary Priority Habitat	Unknown	- No Data refer to Upland Plant Community - Juniper encroachment

3.3.16.1.5 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.16.1.6 Cultural Resources

There are no sites recorded in the Stahle FFR allotment and there are no potential livestock congregation areas identified. BLM staff conducted no monitoring visits and completed no new surveys.

3.3.16.2 Stahle FFR Allotment Environmental Consequences

3.3.16.2.1 Alternative 1

3.3.16.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is December 1-31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used the allotment during two periods of the year including spring and fall. The spring use includes grazing beginning in late May and extending through early June, a period that includes the active growing season for cool-season bunchgrass species. It is assumed that this planned use would be continued. Impacts to cool-season bunchgrass species from frequent active growing season use would continue to limit health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met, current livestock management practices were not identified as a causal factor.

On land within the allotment that includes significant private land ownership (no more than 12 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that the continuation of current livestock management practices that includes frequent grazing use during the active growing season would be at an intensity light enough to allow Standard 4 to be met.

Although Standard 4 would continue to not be met in the allotment due to altered fire regimes and subsequent juniper encroachment, action that would be implemented under Alternative 1 would not contribute to failure meeting the standard in the future.

3.3.16.2.1.2 Soils

Alternative 1, the Stahle FFR allotment would meet Standard 1 and ORMP objectives and continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. The allotment is considered to be at risk due to invasive species, especially juniper, which has the tendency to alter soil infiltration and water holding capacity over time. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.16.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.16.2.1.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.16.2.1.4 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1, current grazing practices would continue and would not impede juniper encroachment. Juniper encroachment would continue to reduce the amount and quality of sagebrush steppe habitat in this allotment (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013). Under Alternative 1, the Stahle FFR allotment would not make progress toward meeting Standard 8.

3.3.16.2.1.5 Social and Economic Values

See Section 3.2.8.2 above.

3.3.16.2.1.6 Cultural Resources

There are no recorded cultural sites in the allotment. No known historic properties would be affected by this alternative.

3.3.16.2.2 Alternatives 2-4

Under Alternatives 2, 3 and 4, the Stahle FFR allotment would be part of the newly configured Red Hill FFR allotment (see Section 2.4.14). The environmental consequences affecting all resources within the Red Hill allotment are analyzed under the Quicksilver allotment in Sections 3.3.14.2.1 – 3.3.14.2.4.

3.3.16.2.3 Alternative 5

3.3.16.2.3.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.16.2.3.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.16.2.3.3 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.16.2.3.4 Wildlife and Special Status Animals

Under Alternative 5, the Stahle FFR allotment would be completely rested from grazing for 10 years. This would allow the uplands to develop whatever perennial grass and forb component that it could have, but with severe juniper encroachment it is expected that shrub, perennial grass and forb abundance would

continue to decrease as juniper and cheatgrass increase. Under Alternative 5 Stable FFR allotment would not make progress toward meeting Standard 8.

3.3.16.2.3.5 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.16.2.3.6 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.17 Steiner FFR Allotment

3.3.17.1 Steiner FFR Allotment Affected Environment

3.3.17.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-54 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Steiner FFR allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-54: Ecological sites mapped for the Steiner FFR allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	609
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	378
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	47
	UNKNOWN/NO DATA		187
Pasture 2	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	272
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	24
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	56
	Steiner FFR total acres		1,574

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-54 above, the vegetation inventory for the Steiner FFR allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-55 is a summary of ecological condition within the Steiner FFR allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-55: Ecological condition for public lands in Steiner allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Steiner FFR Allotment (0613)	55%	45%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Steiner FFR allotment.

Additionally, current vegetation in the Steiner FFR allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-56.

Table VEG-56: Current vegetation in the Steiner FFR allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	530	7%
ASPEN	15	0%
BIG SAGE	80	1%
BIG SAGE MIX	0	0%
BITTERBRUSH	17	0%
BUNCHGRASS	217	3%
CONIFER	2	0%
EXOTIC ANNUAL	94	1%
GREASEWOOD	0	0%
JUNIPER	2,459	34%
LOW SAGE	1,308	18%
MOUNTAIN BIG SAGE	1,253	17%
MOUNTAIN SHRUB	1,077	15%

Vegetation Cover Type	Acres	Percent of Allotment
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	47	1%
WET MEADOW	177	2%
UNKNOWN/NO DATA	0	0%
Total:	7,275	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-55 and VEGE-56. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Steiner FFR allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident with the limited acreage dominated by exotic annuals. The acreage dominated by bunchgrasses is consistent with the variability in reference site conditions under natural disturbance regimes, including periodic fire.

Rangeland Health Standards

The Idaho Standards for Rangeland Health, Standard 4 (Native Plant Communities) is not being met in the two parcels that make up the Steiner FFR allotment, although current livestock management practices are not a contributing factor. Upland vegetation communities present on public land within the two pastures of the Steiner FFR allotment are primarily the slopes and benches that are used by livestock to a lesser extent than the private land in the valley bottoms. One RHA in pasture 1 identified indicators for biotic integrity departing from reference site conditions at a none-to-slight or slight-to-moderate degree. One exception was a moderate departure for invasive plants attributed to juniper throughout the site. NAIP imagery from 2011 (USDA FSA, 2011) indicates that juniper encroachment has occurred to a moderate degree in all public land parcels of the two-pasture allotment.

No assessment has been completed for the public land parcels in pasture 2 of the Steiner FFR allotment; however, vegetation communities similar to those present on public land parcels in pasture 1, combined with annual deferment of grazing use in pasture 2 until after the active growing season for upland bunchgrass species, compared to season-long use in pasture 1, leads to a conclusion that Standard 4 is being met. With the exception of limitations to function caused by juniper, the vegetation communities of the Steiner FFR allotment as a whole provides proper nutrient cycling, hydrologic cycling, and energy flow.

To summarize, the Steiner FFR allotment is not meeting Standard 4 due to altered fire regimes and juniper encroachment. A conclusion if the ORMP objective to improve vegetation health/condition cannot be reached in the absence of trend data.

3.3.17.1.2 Soils

Standard 1 is being met in the Steiner FFR allotment, with watershed indicators showing little departure from expected conditions for the ecological site. Soil and hydrologic function-related indicators vary from none-to-slight to slight-to-moderate and reflect stable soils that display past and some active impacts though abundant gravel, adequate litter, and fair plant diversity are in place to reduce erosion potential.

The biotic integrity shows a departure from reference site conditions where juniper has not been affected by natural fire regimes. It has the potential to contribute to the failure to meet Standard 1 in the future, so pastures 1 and 2 are considered to be at risk.

Although no assessment has been completed for the public land parcels in pasture 2, similar vegetation communities to pasture 1, annual deferment of grazing use until after the active growing season, and no spring use leads to a conclusion that Standard 1 is being met. With the exception of increased risk to watershed health due to future juniper encroachment, the plant community and soil conditions are adequate to provide for proper nutrient and hydrologic cycling and energy flow. Current livestock management is compatible with attainment of Standard 1 for the Steiner FFR allotment.

3.3.17.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷⁴

Standards 2 and 3 are being met in the Steiner FFR allotment. Two named streams traverse the allotment, Louisa and Rock Creek, and both were most recently (2011) assessed in PFC.

Table RIPN-27: Steiner FFR allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Louisa Creek	0.3 (FARS- 2001) (PFC- 2011; natural portion only)	invader and shallow-rooted species	0.3
Rock Creek	0.4 (FAR- 2001) 2.5 (PFC- 2000) (not assessed- 2011)	invader and shallow-rooted species/ age class of veg inappropriate	2.9

Standard 7 is not being met in the Steiner FFR allotment. For IDEQ water quality information associated with the Steiner FFR allotment, see table RIPN-3. Based on IDEQ beneficial use information, Standard 7 is not being met based on both flow alteration and sedimentation/siltation which would be attributed to livestock. However, because BLM determined that Standards 2 and 3 are being met, an assumption was made that although Standard 7 is not being met, the causal factor is not livestock.

3.3.17.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

¹⁷⁴ For additional details on the current condition of the allotment, see the *Supplemented Steiner FFR (0613) Initial Allotment and Permit/Lease Review and Rangeland Health Assessment* document in the project record or available from the Owyhee Field Office

3.3.17.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Steiner FFR allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013j).

Steiner FFF allotment consists of two pastures. A small portion of pasture 1 is preliminary priority habitat for sage-grouse but not the remainder of the allotment. Pasture 1 is used by sage-grouse during the breeding season (IDFG unpublished data). The majority of the allotment should consist of shrub steppe habitats but juniper encroachment is converting much of the allotment to woodland habitats. Riparian habitat only occurs on public land within pasture 1 in the form of Louisa and Rock Creeks. Both creeks were assessed at PFC and are providing adequate habitat for spotted frog, redband trout, and migratory birds.

Table WDLF-18: Focal habitats that are present on the Steiner allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	- Juniper encroachment
Riparian habitats Louisa Creek Rock Creek	Not Limiting	- Diverse composition of hydric vegetation to stabilize stream banks - Redband trout are present. - Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding	Unknown	- Refer to Upland Plant Community

3.3.17.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.17.1.7 Cultural Resources

There are no previously recorded cultural sites in the Steiner FFR allotment. There is one potential livestock congregation area identified in the allotment, but it did not receive survey coverage.

3.3.17.2 Steiner FFR Allotment Environmental Consequences

3.3.17.2.1 Alternative 1

3.3.17.2.1.1 Vegetation

Although the season of use identified under Alternative 1 is between December 1 and December 31, flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used pasture 1 of the allotment beginning in late April and extending through late November, including the active growing season for cool-season bunchgrass species (5/1 to 7/15). At the same time, pasture 2 has consistently been use beginning in early

July, including the later portion of the active growing season. It is assumed that this season of use would be continued. Impacts to cool-season bunchgrass species from annual active growing season use would continue to impact health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met in the allotment, juniper encroachment was identified as the causal factor.

On land within the allotment that includes significant private land ownership (no more than 22 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the season of use includes grazing during the active growing season, the intensity of use would continue to be held to a level that does not contribute toward not meeting Standard 4.

Although Standard 4 would continue to not be met in the allotment due to juniper encroachment, continuation of current livestock management practices would not be a contributing factor toward failure to meet the standard. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.17.2.1.2 Soils

Under Alternative 1, the Steiner FFR allotment would meet Standard 1 and ORMP objectives and continue existing conditions (Section 3.1.2) of maintaining ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would be retained. The allotment is considered to be at risk due to invasive species, especially juniper, which has the tendency to alter soil infiltration and water holding capacity over time. Current conditions would continue to affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.17.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.17.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.17.1), the Steiner FFR allotment would be available for grazing year-round annually (see Table RIPN-8 and Section 3.2.3.1 for specific impacts). Consequently, within the allotment, 2.6 miles of perennial stream and 5.3 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Pasture 1 of the Steiner allotment contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 1 of the allotment has primarily been used during the spring, summer, and fall months annually; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Steiner FFR allotment is meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current situation, the impacts per Table RIPN-8 and Section 3.2.3.1 would continue; however, the allotment would continue to meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.17.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.17.2.1.5 Wildlife and Special Status Animals

Under Alternative 1, grazing practices would remain the same and conditions for upland and riparian habitats would be expected to stay in their present state or continue to follow their current trend.

Upland habitat

Under Alternative 1, grazing practices would not impede juniper encroachment and increased juniper cover would continue to reduce the amount and quality of shrub steppe habitat in the allotment for sage-grouse and other dependent species (Casazza, Coates, & Overton, 2011), (Baruch-Mordo, et al., 2013), (Knick, Hanser, & Preston, 2013).

Although an increase in juniper woodlands in the allotment provides novel habitat for special status species such as flammulated owl, Lewis' woodpecker, and Williamson's sapsucker, a loss of shrub steppe vegetation communities results in a deficiency of adequate habitat for sagebrush-obligate and shrub-dependent special status wildlife species including sage-grouse, pygmy rabbit, sage sparrow, and other migratory birds. Juniper encroachment reduces the abundance and vigor of shrubs, perennial grasses and forbs which reduces nesting and escape cover and the forage base for sage-grouse and other shrub steppe dependent species.

Riparian habitat

Under Alternative 1, riparian habitat would remain in PFC and would continue to providing adequate breeding, cover, and foraging habitat for spotted frog, redband trout, and migratory birds.

Under Alternative 1, the Steiner FFR allotment would not make progress toward meeting Standard 8 in the upland habitats due to juniper encroachment but riparian habitats would meet Standard 8.

3.3.17.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.17.2.1.7 Cultural Resources

There are no recorded cultural sites in the allotment. No known historic properties would be affected by this alternative.

3.3.17.2.2 Alternative 2

3.3.17.2.2.1 Vegetation

The season of use identified under Alternative 2 is April 1-30, although flexibility provided in terms and conditions of the permit would continue to allow a season of use at the discretion of the permittee. The permittee has recently used pasture 1 of the allotment beginning in late April and extending through late November, including the active growing season for cool-season bunchgrass species (5/1 to 7/15). At the same time, pasture 2 has consistently been use beginning in early July, including the later portion of the active growing season. It is assumed that this season of use would be continued. Impacts to cool-season bunchgrass species from annual active growing season use would continue to impact health and vigor of bunchgrass species and forbs as detailed in Appendix E. Although Standard 4 was not met in the allotment, juniper encroachment was identified as the causal factor.

On land within the allotment that includes significant private land ownership (no more than 22 percent public land), additional discretion provided to the permittee without restrictions in livestock numbers has not resulted in recorded utilization exceeding the maximum allowable limit of 50 percent set in the ORMP. It is assumed that this practice would be continued, leading to a conclusion that although the season of use includes grazing during the active growing season, the intensity of use would continue to be held to a level that does not contribute toward not meeting Standard 4.

Although Standard 4 would continue to not be met in the allotment due to juniper encroachment, implementation of livestock management practices under Alternative 2 would not be a contributing factor

toward failure to meet the standard. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met.

3.3.17.2.2.2 Soils

Under Alternative 2, livestock grazing in the Steiner FFR allotment could include yearly spring grazing in both pastures that would increase physical impacts during the wettest period because the permittee retains the flexibility to change grazing management at his discretion. Critical growing season use would take place and influence the active growth of native plant communities that provide for soil stability. However, all pastures of the allotment are currently meeting with likelihood to continue to meet standards and to maintain watershed health though soils would be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, the allotment is expected to maintain soil and hydrologic function with Alternative 2 when compared to the current condition (see Section 3.2.2.3).

3.3.17.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.17.2), the Steiner FFR allotment would be available for grazing year-round annually, and use would be at the discretion of the permittee. Consequently, within the allotment, 2.6 miles of perennial stream, and 5.3 miles of intermittent/ephemeral stream would be affected by the impacts associated with all seasons of grazing. Pasture 1 of the Steiner allotment contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 1 of the allotment has primarily been used during the spring, summer, and fall months annually, and the riparian Standards are being met.

Under current management, the Steiner FFR allotment is meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current situation, the impacts per Table RIPN-8 and Section 3.2.3.1 would continue; however, the allotment would continue to meet the riparian-wetland Standards under this alternative.

3.3.17.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.17.2.2.5 Wildlife and Special Status Animals

Alternative 2 is identical to Alternative 1 and the affects would be the same as described for that alternative. Under Alternative 2 the Steiner FFR allotment would not make progress toward meeting Standard 8 in the upland habitats due to juniper encroachment but riparian habitats would meet Standard 8.

3.3.17.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Two additional cattle could graze on this allotment, but impacts from this alternative would be minimal.

3.3.17.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.17.2.3 Alternative 3

3.3.17.2.3.1 Vegetation

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years. In addition, the intensity of grazing use would be limited to not

exceed 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Although Standard 4 would continue to not be met in the allotment due to juniper encroachment, implementation of livestock management practices under Alternative 3 would not be a contributing factor toward failure to meet the standard. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met. Implementation of the Alternative 3 grazing schedule that provides rest in all pastures during 1 of each 3 years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.17.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing in both pastures that would reduce physical impacts to soils during the wettest and most susceptible period with additional benefits from deferment from critical growing season use over the same timeframe. This offers native plant communities an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Alternative 3 also defines grazing periods and would not leave the season of use open although livestock numbers would continue to be at the permittee's discretion. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.17.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.17.3), the Steiner FFR allotment would be available for grazing during the spring, summer, and fall for two years, and during the spring and fall the third year of a 3-year rotation. Consequently, within the allotment, 2.6 miles of perennial stream and 5.3 miles of intermittent/ ephemeral stream would be affected by the impacts associated with all seasons of grazing. Pasture 1 of the Steiner allotment contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 1 of the allotment has primarily been used during the spring, summer, and fall months annually, and the riparian Standards are being met.

Under current management, the Steiner FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Pasture 1 of the allotment that contains the riparian areas would be managed under a defined 3-year schedule that incorporates riparian area constraint period deferment 1 of 3 years. The impacts associated with spring, summer and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue for 2 of 3 years, and summer grazing impacts would be eliminated 1 of 3 years. Other mandatory terms and conditions of the permit under this alternative would include measures (stubble height, woody browse, and bank alteration) that would reduce impacts associated with the riparian areas condition. Monitoring would be required within pasture 1 during the 2 years when use would occur during the riparian constraint period, and would add assurances that Standards would make progress toward being met. Therefore, the allotment would continue to meet the riparian-wetland Standards under this alternative.

3.3.17.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.17.2.3.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 3 the grazing authorization for the Steiner FFR allotment would maintain the existing number of active AUMs and a 3-year rotation system would be implemented with utilization, stubble height, and bank alteration limits to mitigate effects of grazing during the active season and hot season. Pasture 1 would not be grazed in the active growing season 1 year in 3. Between the rotation system and the utilization limits upland perennial grasses and forbs would be able to maintain vigor and reproductive capability but juniper encroachment would continue to limit the quality of the of the shrub steppe habitats by decreasing the vigor and abundance of shrubs, forbs, and grasses. This reduces the nesting and hiding cover and forage base for sage-grouse and other shrub steppe dependent wildlife species.

Pasture 2 would not be grazed during the active growing season 1 in 3 years. Grazing during the active growing season can reduce the vigor and reproductive capability of perennial grasses and forbs. This limits the height of existing plants and the abundance of seedlings the following year. This would result in less nesting and escape cover and forage base for shrub steppe dependent species. The one year of deferment from active growing season grazing coupled with the utilization limits for use in the other years would maintain the vigor and reproductive capabilities of perennial grasses and shrubs but juniper encroachment would continue to limit these same attributes in parts of the pasture.

Riparian habitat

Pasture 1 would not be grazed during the hot season (July 1 and September 30) in 2 of 3 years. Livestock tend to more time in riparian habitats during the hottest season of the year than in other seasons which can result in heavy use and trampling. This reduces the vigor and reproductive capability of riparian vegetation. 2 of 3 years without livestock in riparian habitats during the hottest part of the year would allow riparian woody and herbaceous species to maintain vigor and reproductive capability and stabilize and expand existing riparian habitats. This would increase the structural complexity and forage base of the habitat which would increase the number of riparian dependent species that would forage and reproduce within pasture 1. Increased structural complexity and extent of riparian habitats would increase the shading and stability of stream channels which would continue to provide adequate habitat for redband trout and other aquatic species.

Under Alternative 3 the Steiner FFR allotment would not make progress toward meeting Standard 8 in the upland habitats due to juniper encroachment but riparian habitats would meet Standard 8.

3.3.17.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. AUMs and cattle numbers would be the same as in Alternative 2, but the new pasture rotations and seasons of use could lead to additional labor and feed costs.

3.3.17.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.17.2.4 Alternative 4

3.3.17.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by ensuring that the prorated grazing that occurs on the public land portion of the allotment does not exceed a stocking rate of approximately 10 acres per AUM, a conservative stocking rate as identified in the alternative description (Section 2.4.17.4). In combination, limits to the season of grazing use and the stocking rate

prorated to the public land portion of the allotment would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E. Although Standard 4 would continue to not be met in the allotment due to juniper encroachment, implementation of livestock management practices under Alternative 3 would not be a contributing factor toward failure to meet the standard. Similarly, the ORMP objective to improve unsatisfactory vegetation health and condition would not be met. Implementation of the Alternative 4 grazing schedule that provides rest in all pastures during one of each three years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.17.2.4.2 Soils

Alternative 4 would provide 2 out of 3 years of deferment from spring grazing in both pastures that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from 2 out of 3 years of deferment from critical growing season use that provides native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. While AUMs and stocking rate would see an increase, levels would remain conservative.

Moreover, Alternative 4 delineates grazing periods, would not leave the season of use at the permittee's discretion, and more clearly defines livestock numbers to identify the maximum numbers of cattle on all landownership within the allotment. This would remove upward flexibility of adding an unidentified number of livestock over a shorter amount of time and reduce physical impacts of trampling, compaction, and pugging to soils that can increase with elevated livestock numbers. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting, and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.17.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.17.4), the Steiner FFR allotment would be available for grazing during the fall for two years, and during the spring and fall the third year of a 3-year rotation. Consequently, within the allotment, 2.6 miles of perennial stream and 5.3 miles of intermittent/ephemeral stream would be affected by the impacts associated with all seasons of grazing. Pasture 1 of the Steiner allotment contains the riparian areas. Recent actual use reported (Appendix B) indicates that pasture 1 of the allotment has primarily been used during the spring, summer, and fall months annually, and the riparian Standards are being met.

Under current management, the Steiner FFR allotment is not meeting the Standards associated with the riparian-wetland resources. Pasture 1 of the allotment that contains the riparian areas would be managed under a defined 3-year schedule that incorporates riparian area constraint period season deferment all years. The impacts associated with grazing during the riparian areas vulnerable time (July-September; Table RIPN-8 and Section 3.2.3.1) would be eliminated all years. Based on percent public land and a conservative stocking rate of 10 acres/ AUM, the alternative proposes a 60 percent increase in active AUMs compared to the current situation. However, the allotment would continue to meet the riparian Standards under Alternative 4.

3.3.17.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.17.2.4.5 Wildlife and Special Status Animals

Upland Habitat

Under Alternative 4, pasture 1 would only be grazed during the active growing season for upland grasses and forbs 1 in 3 years. Grazing after the active growing season has minimal effects of the vigor and reproductive capability of perennial grasses and forbs. The 2 years of active growing season deferment in every three years would allow maintenance of the vigor and reproductive capabilities of perennial grasses and shrubs but juniper encroachment would continue to limit these same attributes in parts of the pasture.

Pasture 2 would not be grazed during the active growing season for perennial grasses and forbs 2 in 3 years. Grazing during the active growing season can reduce the vigor and reproductive capability of perennial grasses and forbs. This limits the height of existing plants and the abundance of seedlings the following year. This would result in less nesting and escape cover and forage base for shrub steppe dependent species. The two years of deferment from active growing season grazing coupled would maintain the vigor and reproductive capabilities of perennial grasses and shrubs but juniper encroachment would continue to limit these same attributes in parts of the pasture.

Riparian habitat

Pasture 1 would also not be grazed during the hot season (July 1 and September 30). Livestock tend to spend more time in riparian habitats during the hottest season of the year than in other seasons which can result in heavy use and trampling. This reduces the vigor and reproductive capability of riparian vegetation. Without livestock in riparian habitats during the hottest part of the year, riparian woody and herbaceous species would maintain and possibly increase in vigor and reproductive capability and stabilize and expand existing riparian habitats. This would increase the structural complexity and forage base of the habitat which would increase the number of riparian dependent species that would forage and reproduce within pasture 1. Increased structural complexity and extent of riparian habitats would increase the shading and stability of stream channels which would continue to provide adequate habitat for redband trout and other aquatic species.

Under Alternative 4, the Steiner FFR allotment would not make progress toward meeting Standard 8 in the upland habitats due to juniper encroachment but riparian habitats would meet Standard 8.

3.3.17.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. There are more AUMs permitted in Alternative 4, but impacts would vary for this alternative due to different cattle numbers permitted each year in a 3-year cycle. Cattle numbers would be greater in all 3 years, however, which could bring in additional revenue from the sale of animals. In addition, new pasture rotations and seasons of use could lead to additional labor and feed costs.

3.3.17.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.17.2.5 Alternative 5

3.3.17.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the public land portion of the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would not be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition due to the dominance of juniper within vegetation communities. Exclusion of authorized livestock grazing under Alternative 4 would

provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.17.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would continue to meet Standard 1 and ORMP objectives to maintain or improve watershed health and condition (see Section 3.2.2.6). On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. Although the allotment is already meeting Standard 1 and ORMP objectives, Alternative 5 would continuously make the fastest progress toward maintaining and improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.17.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.17.2.5.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.17.2.5.5 Wildlife and Special Status Animals

Under Alternative 5 upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would continue to provide vigorous bunchgrasses and perennial forbs which would provide forage and cover for upland wildlife species including sage-grouse. However, under Alternative 5, juniper encroachment would not be impeded in upland habitats and would reduce the abundance and vigor of shrubs, perennial grasses, and forbs which would decrease the quality and abundance of upland sagebrush habitats. Under Alternative 5, Standard 8 would not be met in uplands due to juniper encroachment.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Terrestrial and aquatic wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals).

3.3.17.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.17.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.18 Toy Allotment

3.3.18.1 Toy Allotment Affected Environment

3.3.18.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-57 provides a listing of ecological sites described, a summary

of dominant potential vegetation, and acreage for the Toy allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-57: Ecological sites mapped for the Toy allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	377
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,031
Pasture 2	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	562
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	217
Pasture 3	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	312
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	285
Pasture 4	DRY MEADOW PONE3-PHAL2	Nevada bluegrass-alpine timothy- meadow sedges	9
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	754
	LOAMY BOTTOM 12-16 ARTRT/LECI4	basin big sagebrush; basin wildrye	6
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	15
	Toy total acres		3,569

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-57 above, the vegetation inventory for the Toy allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-58 is a summary of ecological condition within the Toy allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-58: Ecological condition for public lands in Toy allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status¹ (Acres / Percent)	Treated
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	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	Lands ²
Toy Allotment (0533)	45%	55%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Toy allotment.

Additionally, current vegetation in the Toy allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-59.

Table VEG-59: Current vegetation in the Toy allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	3	0%
ASPEN	8	0%
BIG SAGE	535	10%
BIG SAGE MIX	2	0%
BITTERBRUSH	26	0%
BUNCHGRASS	638	12%
CONIFER	1	0%
EXOTIC ANNUAL	301	6%
GREASEWOOD	0	0%
JUNIPER	1,083	20%
LOW SAGE	471	9%
MOUNTAIN BIG SAGE	1,346	25%
MOUNTAIN SHRUB	729	13%
RABBITBRUSH	0	0%
SALT DESERT SHRUB	0	0%
SEEDING	0	0%
SPARSE VEGETATION	0	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	0	0%
WET MEADOW	261	5%
UNKNOWN/NO DATA	2	0%
Total:	5,406	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-53 and VEGE-54. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current

vegetation. In general, juniper is currently the dominant component of a large portion of the landscape in the Toy allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory.

In addition to the encroachment by juniper, other past disturbances are evident with a portion of the landscape dominated by exotic annuals. The acreage of the landscape dominated by bunchgrasses, though somewhat high, is consistent with variability in reference site conditions resulting from natural disturbances, including periodic fire.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in pastures 1, 2, and 4 of the Toy allotment, but is met in pastures 3. Moderate departure of biotic integrity indicators from reference site conditions related to soil factors, functional/structural groups, invasive plants including juniper and the reproductive capability of perennial plants contribute to the failure to meet the Standard in pastures 1, 2, and 4. At the same time, the assessment in pasture 3 identified the pasture as close to reference site conditions for bunchgrass composition. At most, a slight-to-moderate departure from reference site conditions for indicators contributing to biotic integrity, other than invasive plants, was reported for pasture 3. Juniper encroachment into sagebrush steppe vegetation communities, a product of altered fire regimes, is the contributing factor to departure from reference site conditions throughout the allotment. In addition, annual growing season grazing use reported for pasture 2, although at light levels, indicates that current livestock management practices are contributing toward static trend and not meeting Standard 4. Pastures 1 and 4 are frequently allowed to complete the annual growth cycle before grazing is initiated, leading to a conclusion that factors other than current livestock management practices have led to failure to meet Standard 4 in these pastures.

Monitoring indicates a long-term (late 1980s to date) upward trend with greater dominance by deep-rooted perennial grasses at most sites and in all pastures in 2011 compared to the earliest monitoring data. A greater frequency of Idaho fescue is recorded through this time-frame in pasture 3. Idaho fescue is a deep-rooted perennial bunchgrass that is co-dominant with bluebunch wheatgrass at reference site conditions for mountain big sagebrush and low sagebrush vegetation communities present in the Toy allotment. Short-term (2008-2011) static trend is indicated at photo plots in pastures 1, 2, and 4, while frequency data from pasture 3 indicate the short-term continuation of upward trend, with greater occurrence of Idaho fescue. Bluebunch wheatgrass is a bunchgrass less tolerant of grazing impacts than Idaho fescue. The absence of recorded bluebunch wheatgrass leads to a conclusion that historic grazing in all pastures of the Toy allotment, including pasture 3, has contributed to vegetation communities lacking at least one major component present at reference site conditions. Trend data that identify a short-term static trend in pastures 1, 2, and 4 indicate that the Owyhee Resource Management Plan objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has not been met (Table VEGE-2 ORMP; Toy allotment was 45 percent early seral and 55 percent mid-seral). In addition to contributing toward not meeting standard 4, annual growing season grazing use reported for pasture 2 indicates that current livestock management practices are contributing toward static trend and not meeting the ORMP vegetation management objective. A number of sources suggest limiting the intensity of grazing use of bluebunch wheatgrass during the active growing season and limiting active growing season use with periodic deferment or year-long rest use (Stoddart, 1946) (Blaisdell & Pechanec, 1949) (Mueggler, 1972) (Mueggler, 1975) (Anderson, 1991) (Miller, Seufert, & Haferkamp, 1994) (Brewer, Mosley, Lucas, & Schmidt, 2007) (USDA NRCS, 2012) (Burkhardt & Sanders, 2010). Some of these sources suggest this deferment or rest occur as frequent as two of every three years or more often.

To summarize, the Toy allotment is not meeting Standard 4 in pastures 1, 2, and 4 due to altered fire regimes and juniper encroachment, but the standard is met in pasture 3. Annual grazing use of pasture 2 during the active growing season has also contributed toward not meeting the standard. Data that identify a short-term static trend in pastures 1, 2, and 4 indicate that the Owyhee Resource Management Plan objective to improve unsatisfactory vegetation health/condition has not been met in these pastures, while upward trend in pasture 3 indicates that the objective has been met.

3.3.18.1.2 Soils

Current and historic livestock grazing management practices are significant causal factors for not meeting Standard 1 in pastures 1 and 4; pasture 3 is not meeting due to historic livestock grazing; pasture 2 is meeting but, along with pastures 1 and 4, is considered to be at risk for encroachment of western juniper, which can alter watershed function over time.

The reduction in soil and hydrologic function is primarily associated with historic and active accelerated erosional processes that have increased pedestaling of plants and have altered soil infiltration and runoff through elevated water flow. Soil loss is in various stages of stabilization with pasture 1 also experiencing mechanical damage and increased bare ground. The physical damage from hoof action to soils by livestock continues to affect the biological soil crust component, especially in the interspatial areas, adding to a reduction in soil stability.

Variable responses for ground cover trend and slight upward trend in biotic function provide some improvements in pasture 3 that otherwise continues to show impairments from historic livestock grazing impacts due to extensive erosion relics. Altered plant community composition and distribution due to decreased relative abundance of large, deep-rooted native perennial bunchgrasses, along with an increase in western juniper and invasive species, are adding to a decline in upland watershed health in the remaining pastures 1 and 4.

Taken together, soil and hydrologic function are compromised and decrease the ability for proper nutrient cycling, hydrologic cycling, and energy flow. Current and historic livestock management are the primary causal factors in not meeting Standard 1 and ORMP soil management objectives for the Toy Mountain allotment.

3.3.18.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷⁵

Standards 2 and 3 are not being met in pastures 1, 3, and 4, and pasture 2 is making progress. Streams on the Toy allotment include approximately 10.5 miles of North Boulder Creek, Meadow Creek, Bridge Creek, Ditch Creek, Gilmore Creek, and Spring Creek. The 1999 Owyhee Resource Management Plan (RMP) identifies manageable riparian and fisheries habitat on 0.44 miles of North Boulder Creek, and 0.87 miles of Meadow Creek.

The most recent assessments indicate that 3.3 miles of stream are FAR, and 1.5 miles are in PFC. A concern for all streams in the allotment is the impact associated with the historic mining activity, the encroachment of roadways, and the water diversions occurring on adjacent private property.

¹⁷⁵ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Whitehorse/Antelope (0541), Toy (0533), Browns Creek (0585), and West Castle (0648) Allotments* document in the project record or available from the Owyhee Field Office

Additionally, there are areas along the streams that are FAR that have inadequate deep-rooted hydric vegetation that aid in stabilizing stream banks and dissipating energy during high flows. There are areas where the channels are incised skewing the width-to-depth ratios that prevent frequent inundation and development of the floodplains, and trailing and trampling has caused erosion and deposition.

Table RIPN-28: Toy allotment riparian condition

Stream Name	Allotment & Pasture Stream Miles & Condition				Assessment Issues/ Impacts Identified	Total Miles
	Toy-01	Toy- 02	Toy-03	Toy- 04		
Bridge Creek	0.9 (FAR-2001/ PFC-2011)	0.4 (FAR-2001/ PFC-2011)			2001- slightly entrenched channel with some erosion/ portions inadequately vegetated with hydric species which protect stream banks and dissipate energy 2011- rock and shrub armored/ some trailing/ historic mining & dredging/ RBT and beaver present	1.3
Ditch Creek		0.6 (FAR-2003)			inadequate riparian veg/ excessive deposition/ overwide channel	
Gilmore Creek		0.2 (PFC-2011)			some erosion & deposition	0.2
Meadow Creek	1.8 (FAR-2001)				areas lacking soil moisture to support hydric species and that stabilize stream banks/ width depth ratios out of balance preventing floodplain inundation and development/ mining activity impacts	1.8
North Boulder Creek				0.9 (FAR-2001)	mining activity impacts/ lack of shrub regeneration/ lack of hydric veg composition/ noxious weeds present	0.9
				0.3 (not assessed-2011)	rock armored/ RBT & beaver present	0.3
Spring Creek			0.4 (FAR-2013)		trailing and trampling/ excessive removal of riparian veg/ erosion occurring	0.4

Standard 7 is not being met in the Toy allotment. For IDEQ water quality information associated with the Toy allotment, see table RIPN-3.

3.3.18.1.4 Special Status Plants

There is one special status plants that occur within the Toy allotment, mudflat milkvetch. The occurrence of this special status plant is meeting Standard 8. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006, and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation, and determination documents. The BLM used information in those documents to address the allotment-specific affected environment.

Observations on grazing and trampling effects on mudflat milkvetch in this allotment are lacking. It is unknown if the population is extinct or if livestock are presently having any impacts on the plants or habitat. Livestock impacts to this genus have been documented as a result of trampling (Mancuso & Moseley, 1993); populations have been disturbed to some degree by livestock grazing and to a lesser extent by other activities such as roads and wood cutting operations. Plants can apparently persist in areas subjected to some trampling, at least in the short term. This occurrence has a potential future threat of livestock trampling in the case of increased stocking rates or annual livestock use during the active growing season.

3.3.18.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Toy allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013f).

The Toy allotment consists of four pastures and all four pastures contain Preliminary Priority Habitat for sage-grouse. Overall, upland habitats are not providing adequate conditions for many shrub-obligate and ground dwelling, nesting, and foraging species due to an increase in juniper cover and variable increases and reductions in shrub cover. In addition, perennial herbaceous understory cover lacks desirable deep-rooted, tall-structured bunchgrasses especially in pastures 1 and 4. Although results from SG HAs showed suitable upland summer habitat conditions in the majority of pastures, marginal conditions in breeding habitats in pastures 1 and 2 along with juniper encroachment into formerly usable sage-grouse habitats across the majority of the allotment is substantially limiting habitat suitability for sage-grouse.

Conversion to juniper woodlands comes at the expense of shrub steppe habitats which are the proper plant community reference state and condition for the ecological sites that predominate within the allotment. Juniper encroachment was most evident in pastures 1, 2, and 4 and is a contributing causal factor for the allotment not meeting Standard 8 for wildlife in upland habitats.

The majority of riparian habitats within the allotment are not in PFC (see Standard 2). Along some reaches in pasture 3 in particular, riparian habitats are not providing adequate breeding and foraging conditions for many dependent wildlife species. However, structural and species diversity, and appropriate soil moisture supporting herbaceous vegetation in pastures 1, 2, and 4 are resulting in adequate habitat conditions for a diversity of species including migratory birds, redband trout, beaver, and Columbia spotted frogs. Because riparian habitats outside of juniper dominated areas and drainages in the allotment are limited, the majority of riparian habitat is unavailable and unsuitable for sage-grouse. Current livestock grazing management practices are the causal factor for not meeting Standard 8 wildlife in riparian habitats.

Table WDLF-19: Focal habitats that are present on the Toy allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe Salt Desert	Limiting in pastures 1, 2, and 4 Not Limiting in pasture 3	- Juniper encroachment - Reduced deep-rooted perennial grasses
Riparian habitats Bridge Creek Ditch Creek	Limiting	- Inadequate hydric vegetation to stabilize stream banks - Incised channel

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Gilmore Creek Meadow Creek North Boulder Creek		- Trailing and trampling in riparian habitat - Redband trout are present. - Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	- Inadequate cover from too short deep-rooted perennial grasses - Juniper encroachment

3.3.18.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.18.1.7 Cultural Resources

There are three cultural sites on record for the Toy allotment. Sites 10OE5495 and 10OE7664 are historic locations that are experiencing no grazing-related effects. BLM staff monitored site 10OE8470, a prehistoric lithic scatter, but did not find any cultural material or livestock impacts. BLM also conducted surveys at all eight identified potential congregation areas. The inventories resulted in no new cultural site recordings.

3.3.18.2 Toy Allotment Environmental Consequences

3.3.18.2.1 Alternative 1

3.3.18.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting reduction of active AUMs authorized from 940 in the existing permit to 625. Standard 4 was not met in pasture 2 of the allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Standard 4 was also not met in pastures 1 and 4 due to other factors including juniper encroachment. Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with alternate-year scheduled growing season use in all pastures of the allotment as has occurred with recent grazing (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4 except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season resulting in utilization levels in the light to moderate level would continue to limit improvement in upland condition and trend.

Under Alternative 1, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season. Additionally, progress toward meeting Standard 4 in pastures 1 and 4 would not occur due to dominance of juniper in the vegetation community. The ORMP objective to improve health and condition of vegetation would not be met.

3.3.18.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and

site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.18.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.18.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.18.1), the Toy allotment would be available for grazing during the spring and early summer for one year, and during the fall the second year of a 2-year rotation. Consequently, within the allotment, 0.6 miles of perennial stream, and 10.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring months annually, and pastures 3 and 4 have been used during the fall; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Toy allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current situation, the impacts from spring, summer, and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue, and the allotment would not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.18.2.1.4 Special Status Plants

There is one SSPS in this allotment. Standards 1, 2, 3, 4, 7, and 8 are not being met in the Toy allotment. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. The resulting adverse effects on the special status plant site are habitat degradation and decreased population viability with little or no improvement to the habitat as described above in Section 3.1.4 in the Environmental Consequences of Alternative 1 Common to All allotments (Section 3.2.) and Common to All Grazing Alternatives (Section 3.2.4.1). The current management regime would allow for grazing in all pastures every year during early summer (pastures 1 and 2), and fall (pastures 3 and 4) annually, with no scheduled rest or deferment. Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species. It is for the above reasons Alternative 1 will not maintain or improve the habitat for the SSPS.

3.3.18.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative, 1 shrub steppe habitats would continue to provide a reduced quality and quantity habitat due to juniper encroachment. Pastures 1, 2, and 4 would continue to lack deep rooted perennial grasses to provide cover for sage-grouse and other dependent species.

Riparian habitat

Riparian habitats in pasture 3 would continue to provide inadequate adequate breeding and foraging conditions for many dependent wildlife species. While riparian habitats in pastures 1, 2, and 4 would continue to provide adequate habitat conditions for a diversity of species including migratory birds, redband trout, beaver, and Columbia spotted frogs. Current livestock grazing management practices are the causal factor for not meeting Standard 8 wildlife in riparian habitats but not in upland habitats

Sage-grouse habitat

Sage-grouse habitat would continue to be limited by too short of perennial grass cover and juniper encroachment. Reduced cover increases the visibility of nests and individual sage-grouse to predators. Juniper encroachment reduces a sage-grouse's ability to see predators and provides additional roosts for predators. Both of these factors reduce nest success and individual survival.

Under Alternative 1, Toy allotment would not make progress toward meeting Standard 8.

3.3.18.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.18.2.1.7 Cultural Resources

There are no recorded cultural sites affected by livestock grazing in the allotment. No known historic properties would be affected by this alternative.

3.3.18.2.2 Alternative 2

3.3.18.2.2.1 Vegetation

Under Alternative 2, the permittee made application to maintain active authorized use at 940 AUMs and to implement a grazing schedule that limits grazing during the active growing season for cool-season bunchgrass species in all four pastures to no more frequent than in alternate years. Standard 4 was not met in pasture 2 of the allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Standard 4 was also not met in pastures 1 and 4 due to other factors including juniper encroachment. Although impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, can occur with frequent scheduled growing season use, alternate-year deferment of grazing until after the active growing season would provide for a degree of recovery (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization, when combined with alternate year deferment, would not be expected to contribute toward failure to meet Standard 4.

Under Alternative 2, progress toward meeting Standard 4 would occur with deferment of grazing use scheduled during the active growing season scheduled in alternate years, so long as the intensity of grazing use that does occur during the active growing season does not exceed the light utilization level (less than 40 percent). Progress toward meeting Standard 4 in pastures 1 and 4 would continue to be limited due to dominance of juniper in the vegetation community. The ORMP objective to improve health and condition of vegetation would be met to a limited degree similar to meeting Standard 4.

3.3.18.2.2.2 Soils

Alternative 2 for the Toy allotment would include alternating spring or fall grazing in all four pastures. While deferment years would reduce physical impacts during the wet spring period and repetitive critical growing season use, the allotment would see an increase in active AUMs and stocking rate. This would not provide opportunity to increase soil stability and elevate grazing pressure on native plant communities to remain healthy, vigorous, and productive during active growth or improve watershed health, which is also affected from juniper encroachment. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 as compared to Alternative 1 (see Section 3.2.2.3).

3.3.18.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.18.2), the Toy allotment would be available for grazing during the spring and early summer for one year, and during the fall for the second year over the course of a 2-year rotation. Consequently, within the allotment, 0.6 miles of perennial stream, and 10.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and summer seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring months annually, and pastures 3 and 4 have been used during the fall, and the riparian Standards are not being met.

Under current management, the Toy allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the spring and early summer for one year and during the fall the second year (a similar system as compared to the current situation), the impacts from grazing those seasons per Table RIPN-8 and Section 3.2.3.1 would continue. Additionally, the permittee proposes to use 50 percent more active AUMs than would be authorized in Alternative 1 under the current situation. Therefore, the allotment would continue to not meet the riparian-wetland Standards under this alternative.

3.3.18.2.2.4 Special Status Plants

This alternative would not provide opportunity to increase habitat quality for SSPS. As a whole, the allotment would not make progress toward improvement compared to Alternative 1, risking further declining conditions and possible impacts to SSPS.

3.3.18.2.2.5 Wildlife and Special Status Animals

Under Alternative 2, each pasture would either be grazed in the spring or the fall but not both and no pasture would be grazed between May 1 and June 30 in consecutive years. No grazing would occur on the Toy allotment during the hot season. Active AUMs would be increased by 50 percent from 625 AUMs to 940 AUMs.

Upland habitat

Under Alternative, 2 upland habitats would be grazed during the active growing season every other year. This would allow perennial grasses and forbs to reproduce, establish, and develop carbohydrate storage in their root systems without disturbance from livestock every other year. Grazing during the active growing season every other year would reduce the vigor and reproductive capability of perennial grasses. The growing season deferment would allow perennial grasses and forbs to recover from the effects of light to moderate grazing during the active growing season. The increase in active AUMs would increase grazing intensity which could reduce vigor in perennial grasses and reduce herbaceous cover for upland dependent wildlife species. Between providing growing season deferment and increasing active AUMs upland habitats on the Toy allotment would maintain their current conditions and would not progress toward meeting Standard 8.

Riparian habitat

With no grazing during the hot season in any year, riparian habitats would be less likely to be over-utilized and trampled from livestock concentrating there. Hydric vegetation would increase and begin stabilizing stream channels which would reduce erosion into the streams and increase shading for aquatic species. This would allow riparian habitats to increase cover and forage for riparian dependent wildlife species. Reduced sediment and increased shading would reduce the risk of sediment covering and suffocating eggs or trapping newly hatched redband trout. Grazing would still occur during the redband spawning season, so redds could be trampled where they are accessible to livestock. Riparian habitats would make progress toward meeting Standard 8 and provide a variety of niches for riparian dependent species.

Sage-grouse habitat

Deferment during the active growing season would increase cover during the breeding and brood rearing season in that year. The increase in active AUMs would result in an increase in grazing intensity which would result in decreased residual herbaceous vegetation to conceal sage grouse nests. Reduced cover increases the visibility of nests and individual sage-grouse to predators. Juniper encroachment reduces a sage-grouse's ability to see predators and provides additional roosts for predators. Both of these factors reduce nest success and individual survival. Between providing growing season deferment and increasing active AUMs upland habitats on the Toy allotment would maintain their current conditions and would not progress toward meeting Standard 8.

Under Alternative 2, Toy allotment would not make progress toward meeting Standard 8.

3.3.18.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. Fewer cattle numbers and more AUMs could lead to lower revenue from the sale of animals but more forage for the animals that remain.

3.3.18.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.18.2.3 Alternative 3

3.3.18.2.3.1 Vegetation

Standard 4 was not met in pasture 2 of the allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Standard 4 was also not met in pastures 1 and 4 due to other factors including juniper encroachment.

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 1 of 3 years in pastures 3 and 4 and exclude grazing during the active growing season in 2 of 3 years in pastures 1 and 2. In addition, the intensity of grazing use would be limited less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 7/15 more often than 1 of 3 years. Additionally, a reduction in the number of cattle that graze within the allotment would result in an allotment-wide stocking rate of approximately 10 acres per AUM compared to the current permit with 3.8 acres per AUM, would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years or 2 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Progress would be made toward meeting Standard 4 within pasture 2, with limitations to the intensity and seasons of grazing use under Alternative 3. Similar progress toward meeting the standard would not occur in pastures 1 and 4 where factors other than current livestock management practices contribute toward not meeting the standard. While progress toward meeting the ORMP objective to improve unsatisfactory vegetation health and condition would occur in pasture 2, similar progress toward meeting the objective in pastures 1 and 4 is limited by juniper dominance. Implementation of the Alternative 3 grazing schedule that provides deferment of grazing use until after the active growing season in pastures of the Toy allotment during one or two of each three years would provide opportunity for the current vegetation

communities to express aspects of potential within the limits of the existing vegetation composition that includes juniper.

3.3.18.2.3.2 Soils

Alternative 3 would provide 1 out of 3 years of deferment from spring grazing and critical growing season use for the four pastures along with a reduction in livestock numbers, active AUMs, and adjusted stocking rates. This would result in reduced physical impacts to soils during the wettest period of the year and increase the ability of native plant communities to remain healthy, vigorous, and productive during active growth. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 is therefore expected to be better as compared with Alternatives 1 and 2, though not as much as with Alternatives 4 and 5 (see Section 3.2.2.4).

3.3.18.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.18.3), the Toy allotment would be available for grazing during the spring and early summer for one year, and during the fall the second and third year of a 3-year rotation. Consequently, within the allotment, 0.6 miles of perennial stream and 10.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring months annually, and pastures 3 and 4 have been used during the fall, and the riparian Standards are not being met.

Under current management, the Toy allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that incorporates riparian area deferment all years. The impacts from spring and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue, but the impacts from summer use would be eliminated. The changes in season of use would result in a 58 percent reduction in active AUMs compared to the current situation, and the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.18.2.3.4 Special Status Plants

This alternative would reduce active use from 940 to 264 AUMs. The difference in AUMs would be the result of fewer livestock numbers, while retaining the same dates of grazing use for the allotment limiting use in the critical growing season. SSPS plant occurrences in the Toy allotment would improve with this allotment's ability of the native plant communities to remain stable and healthy. With the decrease in AUMs, Alternative 3 is expected to be better for SSPS compared to Alternatives 1 and 2, but not as beneficial as Alternatives 4 or 5 because of the adjusted start date 2 weeks earlier in the season.

3.3.18.2.3.5 Wildlife and Special Status Animals

Under Alternative 3, pastures 1 and 2 would not be grazed during the active growing season (May 1 to June 30) 2 of 3 years and no pasture would be grazed during the hot season (July 1 to September 30 in any year. Pastures 3 and 4 would not be grazed during the active growing season 1 of 3 years and would have utilization limits to mitigate the effects of grazing during the active growing season.

Upland habitat

Pastures 1 and 2

Grazing during the active growing season 1 in 3 years would reduce current year's growth and reduce seed production for perennial grasses and forbs, however with two years of deferment perennial grasses and forbs would recover vigor and reproductive capability. Perennial grasses and forbs would increase in

abundance and stature and would provide increased nesting and escape cover and forage base for sage-grouse and other shrub steppe dependent species. Continued juniper encroachment would eventually limit the shrub-steppe habitats and result in reduced abundance of shrubs, perennial grasses, and forbs.

Pastures 3 and 4

Grazing during the active growing season 2 in 3 years would reduce current year's growth and reduce seed production for perennial grasses and forbs, however with one year of deferment and utilization limits perennial grasses and forbs would recover vigor and reproductive capability. Light to moderate grazing after the active growing season has a minimal effect on the vigor and reproduction of perennial grasses and forbs in the following year. Perennial grasses and forbs would increase in abundance and stature and would provide increased nesting and escape cover and forage base for sage-grouse and other shrub steppe dependent species. Continued juniper encroachment would eventually limit the shrub-steppe habitats and result in reduced abundance of shrubs, perennial grasses, and forbs.

Upland habitats would make progress toward meeting Standard 8 until they were limited by juniper encroachment.

Riparian habitat

Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Riparian habitats in all pastures would be expected to make progress toward meeting Standard 8.

Sage-grouse habitat

Perennial grass height would increase and increase cover for sage-grouse however eventually juniper encroachment would reduce the abundance of shrubs grasses and forbs as it out-competes them and increases in density. Reduced cover increases the visibility of nests and individual sage-grouse to predators. Juniper encroachment reduces a sage-grouse's ability to see predators and provides additional roosts for predators. Both of these factors reduce nest success and individual survival.

A reduction of 58 percent, compared to Alternative 1, of the active AUMs would further reduce grazing pressure and would increase the rate of response from the upland and riparian vegetation as the allotment progresses toward meeting Standard 8 until juniper encroachment limits shrub steppe habitat.

3.3.18.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. There would be fewer AUMs and cattle numbers, as well as deferred grazing an additional year in each 3-year cycle, which could lead to reduced revenue from the sale of animals, as well as additional labor and feed costs.

3.3.18.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.18.2.4 Alternative 4

3.3.18.2.4.1 Vegetation

Standard 4 was not met in pasture 2 of the allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. Standard 4 was also not met in pastures 1 and 4 due to other factors including juniper encroachment.

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 7/15) in 2 of 3 years. In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment from 177 under the current situation to 78 under Alternative 3, resulting in a stocking rate of approximately 10 acres per AUM compared to the current permit with 3.8 acres per AUM allotment-wide. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 2 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Progress would be made toward meeting Standard 4 within pasture 2, with limitations to the intensity and seasons of grazing use under Alternative 4. Similar progress toward meeting the standard would not occur in pastures 1 and 4 where factors other than current livestock management practices contribute toward not meeting the standard. While progress toward meeting the ORMP objective to improve unsatisfactory vegetation health and condition would occur in pasture 2, similar progress toward meeting the objective in pastures 1 and 4 is limited by juniper dominance. Implementation of the Alternative 4 grazing schedule that provides deferment of grazing use until after the active growing season in pastures of the Toy allotment during two of each three years would provide opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition that includes juniper.

3.3.18.2.4.2 Soils

Alternative 4 would provide 2 out of 3 years of deferment from spring grazing that would reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from limited critical growing season use that promotes the ability of native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Subsequently, livestock numbers, active AUMs, and stocking rates would also be reduced and would benefit soils by limiting physical impacts from hoof action and utilization of plants. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.18.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.18.4), the Toy allotment would be available for grazing during the spring and early summer for one year, and during the fall the second and third year of a 3-year rotation. Consequently, within the allotment, 0.6 miles of perennial stream and 10.1 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the spring and fall seasons of grazing. Recent actual use reported (Appendix B) indicates that pastures 1 and 2 of the allotment have primarily been used during the spring months annually, and pastures 3 and 4 have been used during the fall; the riparian Standards are not being met.

Under current management, the Toy allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that incorporates riparian area deferment all years. The impacts from spring and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue, but the impacts from summer use would be eliminated. The changes in season of use would result in a 73 percent reduction in active AUMs compared to the current

situation, and the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.18.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The active grazing use within the Toy allotment with implementation of Alternative 4 would see a decrease of in AUMs. The SSPS occurrence would be more protected and ensured continued improvement or maintained viability under this alternative, with only Alternative 5 providing a more rapid rate of recovery and significant progress toward meeting, or continue meeting all standards and the ORMP objectives.

3.3.18.2.4.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 4, pastures 1, 2, 3, and 4 would not be grazed during the active growing season (May 1 to June 30) in 2 of 3 years, nor would they be grazed during the hot season (July 1 to September 30 in any year. Grazing during the active growing season 1 in 3 years would reduce current year's growth and reduce seed production for perennial grasses and forbs; however with 2 years of deferment perennial grasses and forbs would recover vigor and reproductive capability. Light to moderate grazing after the active growing season has a minimal effect on the vigor and reproduction of perennial grasses and forbs in the following year. Perennial grasses and forbs would increase in abundance and stature and would provide increased nesting and escape cover and forage base for sage-grouse and other shrub steppe dependent species. Continued juniper encroachment would eventually limit the shrub-steppe habitats and result in reduced abundance of shrubs, perennial grasses, and forbs.

Upland habitats would make progress toward meeting Standard 8 until they were limited by juniper encroachment.

Riparian Habitat

Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species. Riparian habitats in all pastures would be expected to make progress toward meeting Standard 8.

Sage-grouse habitat

Perennial grass height would increase and provide suitable cover for sage-grouse however eventually juniper encroachment would reduce the abundance of shrubs grasses and forbs as is out-competes them and increases in density. Reduced cover increases the visibility of nests and individual sage-grouse to predators. Juniper encroachment reduces a sage-grouse's ability to see predators and provides additional roosts for predators. Both of these factors reduce nest success and individual survival.

A reduction of 82 percent of the active AUMs, compared to Alternative 1, would further reduce grazing pressure and would increase the rate of response from the upland and riparian vegetation as the allotment progresses toward meeting Standard 8.

3.3.18.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. There would be fewer AUMs and cattle numbers, as well as deferred grazing an additional year in each 3-year cycle, which could lead to reduced revenue from the sale of animals, as well as additional labor and feed costs.

3.3.18.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.18.2.5 Alternative 5

3.3.18.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 in pasture 2, while similar progress would be limited in pastures 1 and 4 by the dominance of juniper in the vegetation communities. At the same time, progress toward meeting the ORMP objective to improve unsatisfactory vegetation health and condition would be met in pasture 2, while not met in pastures 1 and 4.

3.3.18.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. On the other hand, soils would continue to be susceptible to reduced stability and altered soil infiltration and water holding capacity over time due to the spread of juniper. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.18.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.18.2.5.4 Special Status Plants

There would be no grazing authorized on public lands within the Toy allotment for a period of 10 years. This alternative would give the native plant community significant benefit to make progress toward a healthy, vigorous habitat supporting plant diversity and creating quality SSPS habitats.

3.3.18.2.5.5 Wildlife and Special Status Animals

Under Alternative 5, upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would increase the amount of productive sage-grouse habitat and with no pressure from livestock grazing, bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. However, under Alternative 5, juniper encroachment would not be impeded in many upland habitats and would eventually decrease the quality and abundance of upland sagebrush habitats.

Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Terrestrial and aquatic wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals), especially in riparian habitats.

3.3.18.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.18.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.19 West Castle Allotment

3.3.19.1 West Castle Allotment Affected Environment

3.3.19.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-60 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the West Castle allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-60: Ecological sites mapped for the West Castle allotment

Ecological Site	Dominant Species Expected	BLM acres
¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	9,261
¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	1
SALINE BOTTOM 8-12 SAVE4/LECI4	black greasewood; basin wildrye	127
¹ SILTY 7-10 KRLA2/ACHY	winterfat; Indian ricegrass-bottlebrush squirreltail	347
UNKNOWN/NO DATA		49
West Castle total acres		9,785

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-60 above, the vegetation inventory for the West Castle allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-61 is a summary of ecological condition within

the West Castle allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-61: Ecological condition for public lands in West Castle allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
West Castle Allotment (0648)	100%	0%	0%	0%	0%

¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the West Castle allotment.

Additionally, current vegetation in the West Castle allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-62.

Table VEG-62: Current vegetation in the West Castle allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	46	0%
ASPEN	0	0%
BIG SAGE	654	6%
BIG SAGE MIX	50	0%
BITTERBRUSH	0	0%
BUNCHGRASS	33	0%
CONIFER	0	0%
EXOTIC ANNUAL	10	0%
GREASEWOOD	1,397	14%
JUNIPER	0	0%
LOW SAGE	0	0%
MOUNTAIN BIG SAGE	0	0%
MOUNTAIN SHRUB	0	0%
RABBITBRUSH	4	0%
SALT DESERT SHRUB	6,612	65%
SEEDING	0	0%
SPARSE VEGETATION	1,293	13%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	23	0%
WET MEADOW	10	0%

Vegetation Cover Type	Acres	Percent of Allotment
UNKNOWN/NO DATA	0	0%
Total:	10,132	100

Any differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-56 and VEGE-57. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition may be apparent between potential vegetation and current vegetation. In general, the vegetation communities present in the low elevation sites with limited effective annual precipitation and recorded in PNNL data identify species and sparse vegetation consistent with those present in vegetation communities in reference site condition. The dominance of exotic annuals is not indicated in these data.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in the West Castle allotment. Historic grazing management contributed to the loss of native deep-rooted perennial bunchgrass plants, leaving a shrub dominated vegetation community with limited shallow-rooted native perennial bunchgrasses and annual species. Even though the allotment receives limited annual effective precipitation and has potential to support a higher composition of shrubs than many areas less effected by the rain-shadow effects of the Owyhee Mountains, the land health assessments identified vegetation communities almost totally dominated by shrubs and with very limited herbaceous composition compared to reference site conditions that would have at least 20 percent of the annual production by grass and forb species. The qualitative assessment indicates that the vegetation composition of the West Castle allotment does not adequately contribute toward nutrient cycling, energy flow, and hydrologic cycling consistent with reference site conditions.

Recent trend monitoring indicates a short-term (between 2008 and 2011) and long-term (2002 to present) static to downward trend with greater frequency of the shallow-rooted native perennial grasses (Sandberg bluegrass and squirreltail) as well as annual invasive species (cheatgrass). No deep-rooted perennial bunchgrass species with potential to be present under reference site conditions have been recorded at the trend site through dates of monitoring. Trend data indicate that the Owyhee Resource Management Plan objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas has not been met (Table VEGE-2 ORMP; West Castle allotment was 100 percent early seral). Annual grazing use between October 1 and December 31 (a period of limited grazing impacts to native perennial herbaceous species) with livestock numbers and the duration of use below authorized levels does not indicate that current livestock management practices are a significant factor leading to not meeting Standard 4 or the Owyhee Resource Management Plan vegetation management objective.

To summarize, the West Castle allotment is not meeting Standard 4 due to historic livestock management practices in these sites with limited resilience. Although recent static and downward trend identify that the ORMP management objective to improve vegetation health/condition has not been met, recent fall and early winter grazing use at the recorded slight utilization level is not considered a causal factor.

3.3.19.1.2 Soils

Historic livestock grazing management practices are significant causal factors for not meeting watershed standards in the West Castle allotment. While soils are currently stabilized in a degraded state, hydrologic function is altered and primarily connected with historic grazing.

Much of the decline in infiltration and runoff rates and patterns can be associated with a change of deep-rooted perennial bunchgrasses to more shallow-rooted species and a domination of shrubs. The reduced species diversity and the localized invasion of annuals have compromised soil nutrient replenishment and result in decreased ecological function that leads to a lack of ability for proper nutrient cycling, hydrologic cycling, and energy flow.

Current livestock management practices appear to have limited impact to the biotic community and watershed health, since annual grazing use occurs from the late fall to winter. Soil and hydrologic function are compromised from historic livestock grazing and indicate that the West Castle allotment is not meeting Standard 1 and the ORMP soil management objective of improving unsatisfactory watershed health/condition on all areas.

3.3.19.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷⁶

Standards 2 and 3 are not being met for one of the two creeks that occur within the West Castle allotment. Browns Creek runs along the west boundary, and Antelope Spring Creek combines with Browns Creek near the southwest corner of the allotment. The 1999 Owyhee Resource Management Plan (ORMP) does not identify streams on this allotment as manageable riparian or fisheries habitat.

Browns Creek occurs primarily in a steep canyon that is mostly inaccessible to livestock and was in PFC. However, Antelope Spring Creek was FAR because the riparian area lacked the soil moisture to support riparian vegetation, there was erosion and deposition occurring, and the channel entrenchment was preventing inundation and development of the floodplains which prohibits recharge of the water table and increases flashy flows.

Table RIPN-29: West Castle allotment riparian condition

Stream Name	Stream Miles & Condition	Assessment Issues/ Impacts Identified	Total Miles
Antelope Spring Creek	0.8 (FARS- 2000)	lack of soil moisture to support hydric species/ lack of floodplain inundation and development/ erosion and deposition present	0.8
Brown's Creek	1.2 (PFC- 2000)	upland species and noxious weeds present	0.7

Standard 7 is not being met in the West Castle allotment. For IDEQ water quality information associated with the West Castle allotment, see table RIPN-3.

3.3.19.1.4 Special Status Plants

There are three special status plants that occur within the West Castle allotment: Shockley's buckwheat, white-margined wax plant, and Antelope Valley beardtongue. The occurrences of these special status plants are meeting Standard 8. The Rangeland Health Assessments contain additional detail related to the condition of special status plants, as originally compiled in 2006, and supplemented in 2013. Background details regarding the information presented in the current EA can be found in the assessment, evaluation,

¹⁷⁶ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Whitehorse/Antelope (0541), Toy (0533), Browns Creek (0585), and West Castle (0648) Allotments* document in the project record or available from the Owyhee Field Office

and determination documents. The BLM used information in those documents to address the allotment-specific affected environment.

It has been determined that Standards 1, 2, 3, 4, 7 and 8 are not being met in the West Castle allotment. Current livestock grazing management practices are significant factors in not meeting Standards 2, 3, and 7. Shockley's buckwheat and white-margined wax plant are relatively small in stature, whereas Antelope Valley beardtongue can be 1 to 2 feet in height. None of these plants are considered forage for livestock. These three SSPS populations could possibly experience livestock trampling in the case of increased stocking rates or annual livestock use during the active growing season.

3.3.19.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the West Castle allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report (USDI BLM, 2013) and Determination (USDI BLM, 2013f).

West Castle allotment consists of one pasture and contains some preliminary priority habitat (PPH) for sage-grouse in the southwestern portion of the allotment. The dominant habitat is salt desert shrub with shrub steppe habitat occupying the higher elevation portions of the allotment. No spotted frogs or redband trout are known to occur on the allotment. Standard 8 for wildlife is not met in the West Castle allotment. Upland habitats are not providing adequate conditions for many ground-dwelling, nesting, and foraging species. Deep-rooted, tall-structured bunchgrasses are absent, mid- to small-statured bunchgrasses are decreasing, and invasive cheatgrass is increasing, all affecting the quality of the herbaceous understory. However, the majority of riparian habitats in the allotment (Brown's Creek, in particular) displays diverse species and age-classes with multiple canopies which are providing structurally complex breeding, nesting, and foraging habitat for dependent species. The causal factor for not meeting Standard 8 in upland habitats is historic grazing practices that reduced the composition of deep-rooted perennial herbaceous vegetation.

Table WDLF-20: Focal habitats that are present on the West Castle allotment and whether current conditions within the allotment are limiting habitat quality

Focal Species/Resource	Current Conditions Limiting/Not Limiting	Rationale
Upland Plant Community Shrub steppe Salt Desert	Limiting	- Almost complete absence of deep-rooted perennial grasses in salt desert habitats - Abundance of cheatgrass
Riparian habitats Browns Creek (PFC) Antelope Spring Creek (FAR)	Limiting	- Lack of soil moisture to support hydric vegetation capable of stabilizing stream banks - Erosion of stream banks occurring - Entrenched channel - Lack of floodplain development - Redband trout are not present - Spotted frogs are not present
Sage-grouse Preliminary Priority Habitat Breeding	Limiting	- Lack of cover from deep-rooted perennial grasses and forbs - Presence of cheatgrass - Salt Desert habitats don't support sage-grouse.

3.3.19.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.19.1.7 Cultural Resources

There are 12 cultural sites on record for the West Castle allotment. Eleven sites are prehistoric lithic scatters and one is a historic homestead location (10OE1385). BLM staff monitored 13OE1385, the only site that is at or near any of the three identified potential livestock congregation areas. There are no grazing-related effects occurring at the site and the only feature remaining is a fenced corral or pen. Staff found no historic refuse as described on the site report. Though not near a potential congregation area, sites 10OE779 and 10OE780 received monitoring visits to ascertain their conditions. Neither site is experiencing any livestock-related effects. Staff did not survey the two remaining potential congregation areas.

3.3.19.2 West Castle Allotment Environmental Consequences

3.3.19.2.1 Alternative 1

3.3.19.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting reduction of active AUMs authorized from 700 in the existing permit to 454. Standard 4 was not met in the one-pasture allotment due to historic livestock management practices. Although the current grazing schedule includes only fall and early winter use, grazing use that is outside the active growing season of cool-season bunchgrass species, the allotment lacks many components of the potential vegetation communities that could recover from inappropriate livestock management practices. In addition, the intensity of grazing use that has been recorded in utilization records for recent years has indicated only slight use, a level that would not indicate improper grazing practices (Appendix E).

Under Alternative 1, progress toward meeting Standard 4 would not occur in the allotment, given the current composition of vegetation that lacks significant components of the potential vegetation for these low elevation sites. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although continued implementation of late season use at a low intensity would provide continued opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.19.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts from historic grazing exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.19.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.19.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.19.1), the West Castle allotment would be available for grazing during the fall annually. Consequently, within the allotment, 28.3 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the fall season of grazing (Table RIPN-8). Recent actual use reported (Appendix B) indicates the allotment has primarily been used

during the fall; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the West Castle allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current situation, the impacts from fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue, and the allotment would not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.19.2.1.4 Special Status Plants

There are three SSPS in this allotment. Standards 1, 2, 3, 4, 7, and 8 are not being met in the West Castle allotment. Alternatives that maintain or improve soil, vegetation, riparian, or wildlife habitat conditions inherently maintain or improve the habitat and diversity for SSPS. Alternative 1 would authorize livestock grazing at a level equivalent to the maximum actual use reported recently of 454 AUMs in 2011. The resulting adverse effects on the special status plant site are habitat degradation and decreased population viability with little or no improvement to the habitat, as described above in Section 3.1.4 in the Environmental Consequences of Alternative 1 Common to All allotments (Section 3.2.) and Common to All Grazing Alternatives (Section 3.2.4.1). Livestock impacts would decrease the available recovery time of native and special status plants by limiting the number of individuals able to complete their lifecycle, adversely affecting the health and vigor of species. It is for the above reasons Alternative 1 will not maintain or improve the habitat for the SSPS.

3.3.19.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1, grazing would continue to occur during the late fall and winter which would have minimal impacts on perennial grasses and forbs. However, cheat grass would continue to increase and deep-rooted perennial grasses would continue to be absent. Cover and forage would continue to be extremely reduced for upland wildlife species.

Riparian habitat

Browns Creek would remain in PFC and continue to provide cover and forage for riparian dependent species. However, Antelope Spring Creek would continue to lack sufficient vegetation to stabilize stream banks and erosion would continue. Cover and forage would be reduced and the sediment would continue to enter the stream and reduce habitat quality for aquatic wildlife species.

Sage-grouse habitat

Sage-grouse habitat would continue to lack sufficient cover from deep-rooted perennial grasses and nest success and brood survival would be reduced for sage-grouse attempting to nest in this allotment. Cheat grass would continue to increase and out-compete native perennial grasses and forbs which would further reduce the forage and cover for sage-grouse.

The West Castle allotment would not progress toward meeting Standard 8 and livestock grazing would not be a significant factor.

3.3.19.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.19.2.1.7 Cultural Resources

No recorded cultural sites are being affected by livestock grazing activities. No known historic properties would be affected by this alternative.

3.3.19.2.2 Alternative 2

3.3.19.2.2.1 Vegetation

Under Alternative 2, the permittee made application to maintain active authorized use at 700 AUMs. In addition, the application requested that the current grazing schedule for the allotment be maintained with annual late season grazing between early October and late February. Standard 4 was not met in the one-pasture allotment due to historic livestock management practices. Although the continuation of the current grazing schedule would include only fall and early winter use, grazing use that is outside the active growing season of cool-season bunchgrass species, the allotment lacks many components of the potential vegetation communities that could recover from inappropriate livestock management practices. In addition, the intensity of grazing use that has been recorded in utilization records for recent years has indicated only slight use, a level that would not indicate improper grazing practices (Appendix E).

Under Alternative 2, progress toward meeting Standard 4 would not occur in the allotment, given the current composition of vegetation that lacks significant components of the potential vegetation for these low elevation sites. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although continued implementation of late season use at a low intensity would provide continued opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.19.2.2.2 Soils

Alternative 2 in the West Castle allotment would provide yearly deferment from spring grazing and critical growing season use and differs little from Alternative 1 except by extending grazing through the winter. While the current season of use meets soil constraints, the unique salt desert shrub setting and low elevation increases the potential for physical impacts should winter conditions be wetter without freezing soils. In addition, the allotment would see an increase in AUMs and stocking rate. This would reduce soil stability due to increased potential for impacts from hoof action in a salt-shrub environment that greatly depends on the maintenance of biological soil crusts. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to Alternative 1 (see Section 3.2.2.3).

3.3.19.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.19.2), the West Castle allotment would be available for grazing during the fall and winter annually. Consequently, within the allotment, 28.3 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the fall and winter seasons of grazing (Table RIPN-8). Recent actual use reported (Appendix B) indicates the allotment has primarily been used during the fall, and the allotment is not meeting the riparian Standards.

Under current management, the West Castle allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would potentially be used for additional time compared to the current situation and the use would be at the permittee's discretion, the impacts from fall and winter grazing per Table RIPN-8 and Section 3.2.3.1 would continue to occur. Additionally, the permittee proposes to use 35 percent more active AUMs than would be authorized under Alternative 1 and the current situation. Therefore, the allotment would not meet the riparian-wetland Standards under this alternative.

3.3.19.2.2.4 Special Status Plants

This alternative would not provide opportunity to increase habitat quality for SSPS. As a whole, the allotment would not make progress toward improvement compared to Alternative 1, risking further declining conditions and possible impacts to SSPS.

3.3.19.2.2.5 Wildlife and Special Status Animals

Under Alternative 2, active AUMs would increase by 54 percent, but fall and winter grazing would continue, as in the current situation. Impacts would be the same as described for Alternative 1, but the intensity of grazing would increase and cover and forage for wildlife would be further reduced. Cheatgrass would continue to increase and deep-rooted perennial grasses would continue to be absent.

Utilization and trampling would increase in riparian areas that accessible to cattle. The West Castle allotment would not progress toward meeting Standard 8.

3.3.19.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. There would be fewer cattle but more AUMs, which could lead to less revenue from the sale of animals but more available forage. Because the grazing season would be longer, there could be additional labor costs.

3.3.19.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.19.2.3 Alternative 3

As noted in alternative description for the West Castle allotment (Section 2.4.19.3), Alternative 3 differs from Alternative 1 only in the on-date that is two weeks later (October 1 under Alternative 3 compared to October 15 under Alternative 1). This difference remains outside the dates of constraints identified for all resources under Alternative 3. Although the slightly shorter period of use authorized under Alternative 3 results in a slight difference in the number of cattle authorized to graze, while retaining the same number of active use AUMs, Alternative 3 is not analyzed further in this EA because it does not differ from Alternative 1 substantively.

3.3.19.2.4 Alternative 4

3.3.19.2.4.1 Vegetation

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 2 of 3 years and to limit soil impacts during late winter. Implementation of these constraints results in late fall and early winter use authorized, similar to the season of use in Alternative 1, all outside the active growing season for cool-season bunchgrass species. Additionally, Alternative 4 includes a reduction in the number of cattle that graze within the allotment, resulting in an allotment wide stocking rate of approximately 30 acres per AUM, compared to the current permit with 13.9 acres per AUM and the maximum actual use in recent years at 21.5 AUMs per acre. The reduced intensity of grazing use would provide greater opportunity for cool-season bunchgrass plants to retain litter on site supporting maintenance of soil properties that enhance plant growth. In combination, grazing limited to periods outside the active growing season for cool-season bunchgrass species and limits to the intensity of grazing use would allow the limited component of cool-season bunchgrass species remaining in the allotment to regain health and vigor as detailed in Appendix E.

Under Alternative 4, progress toward meeting Standard 4 would not occur in the allotment, given the current composition of vegetation that lacks significant components of the potential vegetation for these

low elevation sites. Additionally, the ORMP objective to improve unsatisfactory vegetation health and condition is limited, although implementation of the Alternative 4 grazing schedule that includes no use during the active growing season and reduces the intensity of grazing use from levels in Alternative 1 would provide greater opportunity for the current vegetation communities to express aspects of potential within the limits of the existing vegetation composition.

3.3.19.2.4.2 Soils

Alternative 4 in the West Castle allotment would continue to provide yearly deferment from spring grazing and critical growing season use and differs little from Alternative 1. The benefit of Alternative 4 comes from a decrease in livestock numbers, active AUMs, and adjusted stocking rates. This would increase soil stability due to decreased potential for impacts from hoof action in a salt-shrub environment that greatly depends on the maintenance of biological soil crusts. However, progress toward meeting Standard 1 is limited because of altered hydrologic function from the current lack of potential vegetation and localized invasion of annuals in these low elevation sites. As a whole, Alternative 4 would not make progress toward improving soil and hydrologic function though the continued exclusion of spring season use and the reduced grazing intensity would provide greater benefits for upland soils and watershed health compared to Alternatives 1, 2, and 3 (see Section 3.2.2.5).

3.3.19.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.19.4), the West Castle allotment would be available for grazing during the fall annually. Consequently, within the allotment, 28.3 miles of intermittent/ ephemeral stream would be affected by the impacts associated with the fall and winter seasons of grazing (Table RIPN-8). Recent actual use reported (Appendix B) indicates the allotment has primarily been used during the fall, and the allotment is not meeting the riparian Standards.

Under current management, the West Castle allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be grazed the same season as the current situation, the impacts from fall grazing per Table RIPN-8 and Section 3.2.3.1 would occur. However, the alternative proposes to reduce the active AUMs by 28 percent compared to the current situation. No use during the most vulnerable time period for riparian areas (July-September) as well as a reduction in AUMs would allow the allotment to make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.19.2.4.4 Special Status Plants

Grazing permits would be renewed with actions that provide limits in accordance with described constraints to enhance and protect high-value resources, as described in Section 2.2.4 of this EA. The active grazing use within the West Castle with implementation of Alternative 4 would see a decrease of in AUMs due to fewer livestock numbers, while retaining the same dates of grazing use for the allotment. The SSPS occurrence would be more protected and ensured continued improvement or maintained viability under this alternative, with only Alternative 5 providing a more rapid rate of recovery and significant progress toward meeting, or continued meeting all standards and the ORMP objectives.

3.3.19.2.4.5 Wildlife and Special Status Animals

Under Alternative 4, the season of use would be essentially identical to Alternative 1, but the active AUMs would be reduced by 28 percent. Late fall and winter light to moderate grazing typically has minimal impacts on perennial grasses and forbs.

Upland habitat

Under Alternative 4, grazing would continue to occur during the late fall and winter, which would have minimal impacts on perennial grasses and forbs. However, cheatgrass would continue to increase and

deep-rooted perennial grasses would continue to be absent. Cover and forage would continue to be extremely reduced for upland wildlife species.

Riparian habitat

Riparian habitats would not be grazed during the hot season and fewer AUMs would be authorized. Browns Creek would remain in PFC and continue to provide cover and forage for riparian dependent species. Antelope Spring Creek begin to progress toward its potential as riparian vegetation expands and begins stabilizing streambanks. Expanding vegetation would increase cover and forage opportunities for wildlife. The entrenched channel and reduced soil moisture would slow recovery and may limit potential.

Sage-grouse habitat

Sage-grouse habitat would continue to lack sufficient cover from deep-rooted perennial grasses and nest success and brood survival would be reduced for sage-grouse attempting to nest in this allotment. Cheat grass would continue to increase and out-compete native perennial grasses and forbs which would further reduce the forage and cover for sage-grouse.

The West Castle allotment would not progress toward meeting Standard 8 but livestock grazing would not be a significant factor.

3.3.19.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. There would be fewer cattle and AUMs, but higher stocking rate and thus more available forage. Revenue from the sale of animals would be lower, however.

3.3.19.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.19.2.5 Alternative 5

3.3.19.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Limited cool-season bunchgrass species that remain in the allotment would be provided opportunity to regain health and vigor. Although grazing impacts would be removed for 10 years, progress would not be made toward meeting Standard 4 or the ORMP objective to improve vegetation health and condition due to the limited remaining components of the potential vegetation communities.

3.3.19.2.5.2 Soils

The implementation of this alternative would continue to not make progress toward meeting Standard 1 because of altered hydrologic function from the current lack of potential vegetation and localized invasion of annuals in these low elevation. Additionally, the ORMP objective to maintain or improve watershed health and condition would not be achievable. While Alternative 5 would provide the most benefits when compared to all alternatives, the allotment would not progress toward meeting Standard 1, with livestock grazing not being a significant factor.

3.3.19.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.19.2.5.4 Special Status Plants

No grazing would be authorized on public lands within the West Castle allotment for a period of 10 years. This alternative would give the SSPS plant species benefit and can make progress toward an overall healthy, vigorous habitat supporting plant diversity and creating quality SSPS habitats.

3.3.19.2.5.5 Wildlife and Special Status Animals

Under Alternative 5, no grazing would be authorized on public lands within the West Castle allotment for a term of 10 years. Cheatgrass would continue to increase and deep-rooted perennial grasses would continue to be absent. Riparian habitats would continue to make progress toward meeting Standard 8. Upland habitats would not make progress toward meeting Standard 8.

3.3.19.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.19.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.3.20 Whitehorse/Antelope Allotment

3.3.20.1 Whitehorse/Antelope Allotment Affected Environment

3.3.20.1.1 Vegetation

Ecological sites and vegetation condition

The vegetation affected environment common to all allotments in the Toy Mountain Group allotments (Section 3.1.1) provided an introduction to vegetation inventories and ecological site descriptions that are applicable to all the allotments. Table VEG-63 provides a listing of ecological sites described, a summary of dominant potential vegetation, and acreage for the Whitehorse/Antelope allotment (Map ECOL-1a and b). Ecological site potential and succession, as well as an introduction to state-and-transition models, is provided in Appendix E.

Table VEG-63: Ecological sites mapped for the Whitehorse/Antelope allotment

	Ecological Site	Dominant Species Expected	BLM acres
Pasture 1	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	3,231
	¹ LOAMY 10-13 ARTRW8/PSSPS	Wyoming big sagebrush; bluebunch wheatgrass	964
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	348
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	585
	¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	477
	UNKNOWN/NO DATA		228
Pasture 2	¹ CALCAREOUS LOAM 7-10 ATCO-PIDE4/ACHY-ACTH7	Bud sagebrush-shadscale; Indian ricegrass	319

	Ecological Site	Dominant Species Expected	BLM acres
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1,293
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	1,326
	¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	3,010
Pasture 3	¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	885
	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	225
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	1,961
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	454
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	1,304
	¹ SANDY LOAM 8-12 ARTRW8/ACHY	Wyoming big sagebrush; Indian ricegrass-Thurber's needlegrass	141
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	276
	SHALLOW STONY LOAM 8-16 ARAR8/PSSPS	low sagebrush; bluebunch wheatgrass	625
	¹⁻² SOUTH SLOPE GRAVELLY 12-16 ARTRV/PSSPS	mountain big sagebrush; bluebunch wheatgrass	2,590
	¹ VERY SHALLOW STONY 8-12 ARNO4/ACTH7	black sagebrush; Thurber's needlegrass	2
Pasture 4	UNKNOWN/NO DATA		1,188
	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	trace
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	2,309
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	539
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,294
Pasture 5	UNKNOWN/NO DATA		15
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	5
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	1,612
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	232
t u r	UNKNOWN/NO DATA		239
	DRY MEADOW	Nevada bluegrass-alpine timothy-	9

	Ecological Site	Dominant Species Expected	BLM acres
	PONE3-PHAL2	meadow sedges	
	¹ LOAMY 11-13 ARTRT/PSSPS	basin big sagebrush; bluebunch wheatgrass	228
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	112
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	5,423
	¹⁻² VERY SHALLOW STONY LOAM 10-14 ARAR8/POSE-PSSPS	low sagebrush; Sandberg bluegrass- bluebunch wheatgrass	86
	UNKNOWN/NO DATA		2,916
Pasture 7	¹⁻² LOAMY 12-16 ARTRV/FEID-PSSPS	basin big sagebrush; Idaho fescue-bluebunch wheatgrass	1,096
	¹⁻² LOAMY 13-16 ARTRV/PSSPS-FEID	mountain big sagebrush; bluebunch wheatgrass- Idaho fescue	140
	¹⁻² LOAMY 16+ ARTRV/FEID	mountain big sagebrush; Idaho fescue	1
	¹ LOAMY 8-12 ARTRW8/PSSPS-ACTH7	Wyoming big sagebrush; bluebunch wheatgrass-Thurber's needlegrass	18
	¹⁻² SHALLOW CLAYPAN 12-16 ARAR8/FEID	low sagebrush; Idaho fescue-bluebunch wheatgrass	189
	UNKNOWN/NO DATA		123
	Whitehorse/Antelope total acres		38,015

¹ Ecological site descriptions identify a state-and-transition model with increasing Sandberg bluegrass resulting from improper grazing management which if continued and with fire can retrogress through phases and could transition to a new grazing resistant state with Sandberg bluegrass and with cheatgrass as the understory dominant.

² Ecological site descriptions identify a state-and-transition model with potential for juniper encroachment.

In addition to mapping ecological sites listed in Table VEG-63 above, the vegetation inventory for the Whitehorse/Antelope allotment completed in the late 1970s included the assessment of range condition classes. Range condition class data are summarized for public land in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980). These data were updated and ecological condition was reported by allotment in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b). Ecological condition is based on a similarity index that compares the plant community present to the historic potential natural community for that ecological site. The similarity index to the historic climax plant community is the percentage by weight of annual production of plant species present at the inventoried site. Table VEG-64 is a summary of ecological condition within the Whitehorse/Antelope allotment from representative locations sampled during the vegetation inventory completed in the late 1970s and updated during development of the ORMP (USDI BLM, 1999a).

Table VEG-64: Ecological condition for public lands in Whitehorse/Antelope allotment, reported in the Owyhee Grazing Environmental Impact Statement Draft (USDI BLM, 1980) and updated in the Proposed Owyhee Resource Management Plan and Final Environmental Impact Statement (USDI BLM, 1999b)

Allotment	Ecological Status ¹ (Acres / Percent)				Treated Lands ²
	Early Seral	Mid-Seral	Late Seral	Potential Natural Condition	
Whitehorse/Antelope	40%	50%	10%	0%	0%

Allotment (0541)					
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¹ Ecological status is based on a similarity index to a reference community, in most cases the historic climax plant community or potential natural community (BLM Ecological Site Inventory Handbook: 1734-7). A similarity index of 0-25% is early status; A similarity index of 26-50% is mid status; A similarity index of 51-76% is late status; A similarity index of 77-100% is potential natural community.

² Treated lands include those where brush control treatments or seedings preclude classification within one of the conditions classes.

The ORMP vegetation management objective (VEGE-1) is to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas. With greater than 10 percent of the allotment in early seral condition and less than 40 percent in late seral condition, the objective to improve applies to the Whitehorse/Antelope allotment.

Additionally, current vegetation in the Whitehorse/Antelope allotment, based on mapping done by the Pacific Northwest National Laboratory (PNNL) from 2000/2001 Landsat satellite imagery and updated for vegetation treatments and fire, is shown in Table VEG-65.

Table VEG-65: Current vegetation in the Whitehorse/Antelope allotment based on PNNL data as updated

Vegetation Cover Type	Acres	Percent of Allotment
AGRICULTURE	4	0%
ASPEN	70	0%
BIG SAGE	12,183	30%
BIG SAGE MIX	366	1%
BITTERBRUSH	39	0%
BUNCHGRASS	3,967	10%
CONIFER	48	0%
EXOTIC ANNUAL	4,388	11%
GREASEWOOD	43	0%
JUNIPER	3,062	7%
LOW SAGE	4,622	11%
MOUNTAIN BIG SAGE	6,125	15%
MOUNTAIN SHRUB	575	1%
RABBITBRUSH	144	0%
SALT DESERT SHRUB	3,503	9%
SEEDING	177	0%
SPARSE VEGETATION	84	0%
STIFF SAGE	0	0%
URBAN	0	0%
WATER	2	0%
WET MEADOW	1,508	4%
UNKNOWN/NO DATA	1	0%
Total:	40,911	100

The differences between potential vegetation mapped in ecological site inventories and the current vegetation identified in PNNL data are indicated by comparing Tables VEGE-59 and VEGE-60. Ecological site and PNNL mapping were completed at different scales and with different vegetation classification systems, so precise comparison of the two tables is not possible, but general differences in plant community structure and composition are apparent between potential vegetation and current vegetation. With the exception of the dominance of a portion of the allotment by exotic annuals, vegetation communities dominated by species consistent with reference conditions that include big

sagebrush, low sagebrush, and bunchgrass remain present. Juniper is currently the dominant component of a small portion of the landscape in the Whitehorse/Antelope allotment. Current juniper dominance within some ecological sites can be compared to the limited presence as small inclusions within vegetation communities which, at potential, would support dominant mountain big sagebrush or low sagebrush in the shrub layer, and native perennial bunchgrasses and forbs in the understory. The dominance of limited acreage by bunchgrass species is consistent with the variability of reference site conditions under natural disturbance regimes, including periodic fire that temporarily removes sagebrush.

Rangeland Health Standards

The Idaho Standards for Rangeland Health Standard 4 (Native Plant Communities) is not met in pastures 1, 2, and 5 of the Whitehorse/Antelope allotment, but is met in pastures 3, 4, 6, and 7 (formerly pasture 3A). Salt desert shrub and Wyoming big sagebrush vegetation communities in pastures 1 and 2, communities that receive less than 13 inches of average annual effective precipitation and are located below an elevation of 4,500 feet, have limited resilience to disturbance factors. Although evidence of historic grazing impacts are present throughout the allotment, with the reduced composition of deep-rooted native perennial bunchgrasses (e.g., bluebunch wheatgrass, Idaho fescue, Thurber's needlegrass, and needle-and-thread grass) from reference site conditions and a greater dominance by increaser species (e.g. Sandberg bluegrass and squirreltail), traditional turnout of cattle in low elevation pastures and livestock movement up in elevation has resulted in pastures 1 and 2 often grazed during the active growing season (May 1 – June 30). Limited soil moisture after movement of cattle off these pastures limits regrowth and the completion of the annual growth cycle before summer dormancy. Although the presence of cheatgrass is noted throughout the allotment, no sites are dominated by the introduced annual grass.

In addition, pasture 5 is not meeting Standard 4. Shallow soils and only limited deferment of livestock grazing until after the active growing season have held low sagebrush/bunchgrass vegetation communities in a depressed condition with the interspace between shrubs dominated by Sandberg bluegrass or with areas devoid of vegetation or litter.

Although juniper are scattered throughout the allotment, with the exception in pastures 1 and 2, dense stands that would contribute toward not meeting Standard 4 are limited to localized areas. Juniper encroachment into shrub-steppe vegetation communities has the potential to cause Standard 4 to not be met in the future, especially in pastures 3 through 7 outside the salt desert shrub and Wyoming big sagebrush vegetation communities.

The Owyhee Resource Management Plan vegetation management objective to improve unsatisfactory and maintain satisfactory vegetation health/condition on all areas is also not met within a number of pastures. Downward trend recorded at monitoring sites in pastures 1, 3, and 5, static trend showing lack of improvement in vegetation communities dominated by shallow-rooted bunchgrasses in pasture 2, and inconsistent upward trend and concern with the expansion of annual grasses and short-lived perennial grasses (bulbous bluegrass) in pasture 4 lead to a conclusion that the vegetation management objective is not met. The objective is met in pasture 6 where an acceptable composition of deep-rooted perennial bunchgrasses and sagebrush species is more consistent with vegetation communities present under natural disturbance regimes.

To summarize, the Whitehorse/Antelope allotment is not meeting Standard 4 in pastures 1, 2, and 5 due to current livestock management practices that include annual early season grazing use of pastures 1 and 2, pastures that receive limited effective annual precipitation and have little resilience to grazing impacts. The standard is met in pastures 3, 4, 6, and 7. Annual grazing use of pastures 1 and 2 early in the grazing season resulting in downward and static trend has also contributed toward not meeting the ORMP objective to improve unsatisfactory vegetation health/condition. Similarly, downward trend in pastures 3

and 5, in addition to the expansion of annual species in pasture 4 has also contributed toward not meeting the ORPM vegetation objective. The ORMP vegetation objective is met in pasture 6.

3.3.20.1.2 Soils

Current and past livestock grazing management practices are significant causal factors for not meeting upland watershed Standard 1 in pastures 1, 2, 3, 5, and 6 of the Whitehorse/Antelope allotment; watershed health is appropriate in pastures 4 and 7. The reduction in soil and hydrologic function is associated with physical soil disturbance and an altered plant community composition and distribution due to decreased relative abundance of large, deep-rooted native perennial bunchgrasses.

An increase in invasive species also contributes to an ongoing decline in hydrologic function and nutrient availability. As a result, historic and active accelerated erosional processes have increased pedestaling of plants that, along with mechanical damage to soils by livestock hoof action, has also affected the biological soil crust component, especially in the interspatial areas.

The Owyhee Resource Management Plan management objective to improve unsatisfactory and maintain satisfactory watershed health/condition on all areas is also not met within a number of pastures. Downward trend recorded at the monitoring sites in pasture 3, and primarily static trend showing lack of improvement with increase in bare ground in pasture 2 lead to a conclusion that the watershed management objective is not met.

The decreased ecological function and impaired soils indicate that soil and hydrologic function are compromised. Current and historic livestock management is the primary contributing factor for not meeting Standard 1 and ORMP soil management objectives of improving unsatisfactory watershed health/conditions for the Whitehorse/Antelope allotment.

3.3.20.1.3 Riparian/Water Quality

A general common-to-all-allotments description of the affected environment can be found above in Section 3.1.3.

Existing Condition¹⁷⁷

Standards 2 and 3 are not being met in all pastures of the Whitehorse/Antelope allotment. There are numerous streams and riparian areas on all seven pastures of the Whitehorse/Antelope allotment. The 1999 ORMP identified riparian and fisheries habitat on approximately 15.6 miles of streams including Castle Creek, North Fork Castle Creek, and South Fork Castle Creek. Inventories and assessments were conducted on approximately 28 miles of streams on the allotment between 1999 and 2011. Approximately 17.6 miles were most recently in PFC, and 10.4 were FAR. In general, for the streams that are still FAR, there was inadequate riparian vegetation present to protect stream banks and dissipate energy during high flow events. There was also often erosion and deposition present and livestock trails were compacting soils.

One MMIM site was established along Whitehorse Creek in pasture 6. The median stubble height was 7 inches, woody use was 47 percent, and stream bank alteration was 42 percent. The woody use and bank alteration metrics exceed criteria for maintaining healthy riparian areas.

¹⁷⁷ For additional details on the current condition of the allotment, see the *Supplemented Rangeland Health Assessments, Evaluation Reports and Determinations, for the Whitehorse/Antelope (0541), Toy (0533), Browns Creek (0585), and West Castle (0648) Allotments* document in the project record or available from the Owyhee Field Office

A total of 17 springs have been assessed at least once. Ten of them were in PFC, four were FAR, one was NF, and three were not assessed. In general, the springs that had condition issues were developed with the flow patterns altered and soils compacted by trampling.

Table RIPN-30: Whitehorse/ Antelope allotment riparian condition

	Allotment & Pasture Stream Miles & Condition								
Stream Name	Whitehorse/Antelope - 01	Whitehorse/Antelope - 02	Whitehorse/Antelope - 03	Whitehorse/Antelope - 04	Whitehorse/Antelope - 05	Whitehorse/Antelope - 06	Whitehorse/Antelope - 07	Assessment Issues/ Impacts Identified	Total Miles
Alder Creek		0.4 (FAR-2000/ PFC-2011)	0.4 (FAR- 2000)				0.1 (FAR-2000)	livestock trails	0.9
Antelope Spring Creek	0.3 (FARS-2000)							portion of longer reach that extends into West Castle allot-- lack of soil moisture to support hydric species/ lack of floodplain inundation and development/ erosion and deposition present	0.3
Brown's Creek	0.5 (FARS-2000)							lack of floodplain inundation/ areas that lack soil moisture to support deep-rooted, bank stabilizing species	0.5
	0.8 (PFC- 2000)								0.8
Buckaroo Creek and Trib	1.2 (FAR- 2000) Trib: 0.4 (FAR-2000)	2.2 (FAR-2000)						lacking adequate hydric vegetation to protect streambanks and dissipate energy	3.8
Castle Creek	3.5 (PFC-1999)	2.1 (PFC-1999/ PFC-2011)	0.8 (PFC-1999/ PFC- 2011)						6.4
			0.9 (FARU- 1999/ PFC- 2011)					lateral instability/ areas lack deep-rooted species that stabilize banks/	0.9
						1.7 (FAR- 1999/ PFC- 2011)		water gap heavily used/ areas lack deep-rooted species that stabilize banks/ noxious weeds present/	1.7
Cottonwood Creek			0.5 (pictures only/ ephemeral- 2011)					armored with boulders	0.5
Horse Thief Creek			0.4 (PFC- 2011)						
NF Castle Creek						1.7 (FARS-2000) 2.3 (PFC- 2000/ PFC- 2011)		lack of soil moisture to support deep-rooted species that stabilize stream banks/ lateral instability/ overwide channel	3.2
SF Castle Creek						1.0 (FARU-2000/ PFC-2011) 0.7 (PFC-2000)		channel characteristics do not dissipate energy/ overwide channel	1.7

Allotment & Pasture Stream Miles & Condition									
Stream Name	Whitehorse/Antelope - 01	Whitehorse/Antelope - 02	Whitehorse/Antelope - 03	Whitehorse/Antelope - 04	Whitehorse/Antelope - 05	Whitehorse/Antelope - 06	Whitehorse/Antelope - 07	Assessment Issues/ Impacts Identified	Total Miles
West Spring Creek						1.2 (FAR- 2000)		vertical & lateral instability/ erosion & deposition/ overwide channel	1.2
Whitehorse Creek				0.2 (FARU-2000)	0.5 (FARU-2000)	1.4 (FARS-2000/ PFC-2011)		incised & overwide channel/ degraded banks/ lack of deep-rooted species/ lateral & vertical instability flow patterns altered/ lack of riparian species present	2.1

Modified MIM Metrics						
Stream Name	Assessment Year/ Pasture	Median SH (inches)	Woody Use (%)	Streambank Alteration (%)	Stable Bank (%)	Covered Bank (%)
Whitehorse Creek	2011/3	7.0	47.1	42	63	98

Springs Assessed, Condition, & Issues Identified			
Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Antelope Spring	1/ 2003	PFC	
	1/ 2011	PFC	
Unnamed Spring 5	1/ 2011	PFC	spring source well armored with boulders
Unnamed Spring 8	2/ 2011	FAR	riparian species overgrazed and trampled/ altered surface flows (70-80 % trampled)/ soils compacted by trailing
Unnamed Spring "5413B"	3/2003	PFC	
Unnamed Spring "5413C"	3/2003	PFC	
Reservation Spring	3/2003	NF	area heavily impacted by livestock/ bare ground/ area shrinking/ water diverted to trough
Unnamed Spring 7	3/ 2011	PFC	source protected with dense shrub cover/ some flow alteration from trampling
Unnamed Spring 9	3/ 2011	PFC	some trailing

Springs Assessed, Condition, & Issues Identified			
Spring Name	Pasture/ Assessment Year	PFC Condition	Assessment Issues/ Impacts Identified
Unnamed Spring 10	3/ 2011	PFC	
Tippin Spring	4/ 2011	not assessed	developed with exclosures protecting riparian area/ Whitetop (noxious weed) encroaching
Unnamed Spring 2	4/ 2011	PFC	some erosion from livestock trailing
Unnamed Spring 3	4/ 2011	FAR	exclosure fence burned/ dense cover of willow, but livestock accessing
Upper VG Spring	4/ 2011	PFC	
Unnamed Spring 4	5/ 2011	not assessed	developed/ exclosure fence open with livestock utilizing forage & water
Buck Gulch Spring	6/ 2011	not assessed	directly adjacent to lotic/ water used for troughs/ no wetland area associated with spring
Evans Spring	6/ 2011	FAR	developed/ altered flow and soils caused by trampling
Unnamed Spring 11	7/ 2011	FAR	developed/ alterations from livestock trampling/ erosion & deposition

Standard 7 is not being met in the Whitehorse/Antelope allotment. For IDEQ water quality information associated with the Whitehorse/ Antelope allotment, see table RIPN-3.

3.3.20.1.4 Special Status Plants

As previously stated in Section 3.1.4 of this EA, there are no populations of special status plant species known to occur in this allotment, although special status plant populations are likely to occur in areas within this allotment and thus would be impacted by cattle, OHV and other habitat disturbance or degradation.

3.3.20.1.5 Wildlife and Special Status Animals

In addition to the general overview of the Affected Environment for Wildlife and Special Status Animals in the Toy Mountain allotments presented above (Section 3.1.5), the general descriptions of the current condition of species and their habitats within the Whitehorse/antelope allotment presented here are based on the more detailed treatments in the 2013 Rangeland Health Assessment report and Determination (USDI BLM, 2013f).

White/Antelope allotment is divided into seven pastures (Maps RNGE-1a and RNGE-1b). The major habitat type within the allotment is sagebrush steppe with some scattered juniper encroachment (Maps GEN-3a and GEN-3b). Sage-grouse use habitats within the allotment during breeding, summer, and winter seasons (Map WDLF-3). In addition to the two leks that occur on the allotment, the majority of the allotment intersects sage-grouse habitat correlated with high breeding densities (i.e., 75 percent breeding bird density area; (Doherty, Tack, Evans, & Naugle, 2010); Map WDLF-1).

There are numerous streams and riparian areas on all seven pastures of the Whitehorse/Antelope allotment. Inventories and assessments were conducted on approximately 28 miles of streams on the allotment between 1999 and 2011. Approximately 17.6 miles were most recently in PFC, and 10.4 were FAR. In general, for the streams that are still FAR, there was inadequate riparian vegetation present to protect stream banks and dissipate energy during high flow events. There was also often erosion and deposition present and livestock trails were compacting soils.

A total of 17 springs have been assessed at least once. Ten of them were in PFC, four were FAR, one was NF, and three were not assessed. In general, the springs that had condition issues were developed with the flow patterns altered and soils compacted by trampling.

Standard 8 for wildlife is not met in the Whitehorse/Antelope allotment because overall upland and riparian habitats are not providing adequate conditions for many shrub-obligate and riparian dependent species. Upland habitat conditions in pastures 1, 2, and 5 are not improving and limiting habitat quality for many species of wildlife. In addition, the structure necessary for sage-grouse breeding habitat is marginal in pastures 1 and 3. However, across the allotment, the quality of other sage-grouse seasonal habitats (i.e., upland summer and winter) is not limiting sage-grouse use.

Riparian habitat conditions have improved in pastures 2, 3, and 6. In the many of areas, riparian habitats are providing adequate breeding and foraging conditions for many dependent wildlife species due to structural diversity, composition, and vigor of hydric vegetation. However, some issues are apparent and many areas accessible to livestock lack some habitat components (i.e., diverse age-classes and species, abundant and vigorous growth) that provide suitable conditions for a diversity of dependent species. Additionally, conditions in riparian vegetation communities in pastures 6 and 7 are not providing suitable brood-rearing and summer riparian habitats for sage-grouse.¹⁷⁸

¹⁷⁸ The determination for the Whitehorse Antelope allotment indicates that the riparian habitats overall are making progress toward meeting Standard 8. However to make the wildlife habitat analysis consistent with the riparian analysis from standards 2 and 3 that statement has been removed from the EA. Some of the riparian habitats are not improving so the claim that overall they are improving is in error.

The Whitehorse/Antelope allotment is not meeting Standard 8 and current livestock practices are significant factors.

Table WDLF-21: Whitehorse/Antelope allotment pastures 1, 2, and 5. Focal habitats that are present and whether current conditions within the pasture are limiting the quality of the habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe	Limiting	-Reduced composition of deep-rooted perennial grasses
Riparian habitats Castle Creek Browns Creek Cottonwood Creek Buckaroo Creek Alder Creek Whitehorse Creek North Fork Castle Creek	Limiting	-Inadequate riparian vegetation to protect stream banks. -Erosion and bank alteration present. -Redband trout are present. -Spotted frogs are not present.
Sage-grouse Preliminary Priority Habitat Breeding Summer Winter	Limiting	-Reduced Canopy cover of deep-rooted perennial grasses and forbs -Reduced height of deep-rooted perennial grasses. -Increased canopy cover of cheatgrass.
	Not Limiting Pasture 2	-Adequate canopy cover and height of deep-rooted perennial grasses and forbs Adequate height and canopy cover of sagebrush.

Table WDLF-22: Whitehorse/Antelope allotment pastures 3, 4, 6, and 7. Focal habitats that are present and whether current conditions within the pasture are limiting the quality of the habitats

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Upland Plant Community Shrub steppe Conifer woodland	Not Limiting	-Adequate composition of deep-rooted perennial grasses. -Cheat Grass is not abundant. -Juniper encroachment may begin to limit in the future.
Riparian habitats Castle Creek South Fork Castle Creek North Fork Castle Creek Rock Creek Cottonwood Creek Horse Thief Creek Alder Creek West Spring Creek	Limiting but improving	-Inadequate riparian vegetation to protect stream banks. -Erosion and bank alteration present. -Limited woody riparian structure. -Redband trout are present. -Spotted frogs are present.
Sage-grouse Preliminary Priority Habitat Breeding Summer	Pasture 3 Limiting	-Reduced canopy cover of deep-rooted perennial grasses. -Increased canopy cover of cheatgrass is a concern.

Focal Species/Resource	Current Conditions Limiting/Not limiting	Rationale
Winter	Pasture 4 Not Limiting	-Adequate canopy cover and height of deep-rooted perennial grasses and forbs Adequate height and canopy cover of sagebrush.
	Pastures 6 and 7 Limiting but improving	Riparian habitats are improving which provides more foraging habitat during the summer season.

3.3.20.1.6 Social and Economic Values

See Section 3.1.8 for a discussion of the affected environment relating to social and economic values in the Toy Mountain Group allotments.

3.3.20.1.7 Cultural Resources

The Whitehorse/Antelope allotment is home to 81 previously recorded sites, 77 of which are prehistoric locations. Two sites are within 100 meters of an identified potential congregation area. Site 100E974 is a lithic scatter and stone tool site originally described as heavily trampled by livestock, but has been protected inside of an enclosure for the past 17 years. Staff did not monitor the site. Site 100E1012 is a lithic scatter initially reported in 1977 as being subjected to heavy surficial trampling and reaffirmed again in 1994 during a monitoring visit. During that monitoring, subsurface testing revealed the presence of buried deposits and field personnel recommended the site as potentially eligible for the NRHP. BLM staff again monitored the site in November of 2012 and found the area devoid of vegetation from trampling but livestock trails were not over 3 centimeters deep. The site is not experiencing disturbances to a level that would threaten or alter the eligibility characteristics that qualify it for the NRHP. Future monitoring visits will be done to determine the need for any mitigation or protection measures.

Contract personnel surveyed 17 of the 24 potential livestock congregation areas and recorded six new cultural sites. All of the sites are prehistoric lithic scatters. Site 13-O-18-P001 is affected by a two track road, natural erosion from two stream channels and livestock trampling that is less than 10 centimeters deep. The trampling covers approximately 20 percent of the site's surface, but is not causing any significant effects. Site 13-O-18-P002 is located at a spring. The site is experiencing stream channel erosion and livestock trampling to more than 10 centimeters in some areas. The site is not significantly affected by livestock currently, but future monitoring and an eligibility determination are recommended. Site 13-O-18-P011 is approximately 100 meters away from a spring and has several shallow trails of less than 10 centimeters deep passing through it. The trails affect approximately 10 percent of the site's surface but are not causing any adverse effects. Site 13-O-18-P006 is divided in two by a stream channel and has minor effects from trampling that are less than 10 centimeters deep over 5 percent of its surface area. Site 13-O-18-P012 is near a salting location. Although the effects to it are minor, trails and trampling are less than 10 centimeters deep over 10 percent of its surface area, it is recommended that the salt blocks be moved at least 200 meters away from its current location to prevent any further deterioration.

3.3.20.2 Whitehorse/Antelope Allotment Environmental Consequences

3.3.20.2.1 Alternative 1

3.3.20.2.1.1 Vegetation

Implementation of Alternative 1 would continue current livestock management actions, only differing from terms and conditions of current permits with a reduction of livestock numbers and the resulting

reduction of active AUMs authorized from 4,345 in the existing permit to 1,807. Standard 4 was not met in pastures 1, 2, and 5 of the Whitehorse/Antelope allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. At the same time, Standard 4 was met in pastures 3, 4, 6, and 7.

Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with annual scheduled growing season use in pasture 1 and 2 of the allotment (Appendix E). The light to moderate utilization of key forage plants documented with recent management would be expected to continue (See Appendix B). This level of utilization would not be expected to contribute toward failure to meet Standard 4, except when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season, resulting in utilization levels in the light to moderate level, would continue to limit improvement in upland condition and trend.

Under Alternative 1, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season in pastures 1 and 2, pastures that annually receive less than 13 inches of effective precipitation and lack soil moisture for regrowth following scheduled grazing use. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.20.2.1.2 Soils

The implementation of Alternative 1 would continue existing conditions of not meeting Standard 1 and ORMP objectives (Section 3.1.2) and would provide no significant progress to ecological function and site potential because proper nutrient cycling, hydrologic cycling, and energy flow would not be maintained or improved. Where soil impacts currently exist, conditions would remain impaired and affect soil stability, productivity, and hydrologic function at various levels as described above in Section 3.3.20.1.2, in the Impacts Common to All Grazing Alternatives (Section 3.2.2.1), and in Environmental Consequences of Alternative 1 Common to All Allotments (Section 3.2.2.2).

3.3.20.2.1.3 Riparian/Water Quality

Under Alternative 1 (for details, see Sections 2.2.1 and 2.4.20.1), pasture 1 of the Whitehorse/Antelope allotment would be available for grazing during the spring annually, pastures 2 and 3 would be open during the summer annually, pastures 4 and 5 would be available during the fall annually, pasture 6 would be open during the summer and fall annually, and pasture 7 would be rested all years. Consequently, within the allotment, 17.5 miles of perennial stream, 122.7 miles of intermittent/ ephemeral stream, and 23 springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing (Table RIPN-8). Recent actual use reported (Appendix B) indicates a similar pattern of use among the pastures; therefore, the impacts from these seasons of use would likely continue to be most prevalent under Alternative 1.

Under current management, the Whitehorse/Antelope allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and under the same terms as the current situation, the impacts from spring, summer, and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue, and the allotment would not meet the riparian-wetland Standards under this alternative. The management that led to the current condition is what defines this alternative and will form the baseline for comparison to the other alternatives.

3.3.20.2.1.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.20.2.1.5 Wildlife and Special Status Animals

Upland habitat

Under Alternative 1 in pastures 3, 4, 6, and 7, upland habitats shrub steppe habitats would continue to provide adequate woody cover, structure, and forage for many shrub-obligate and dependent species. Within upland habitats in pastures 1, 2, and 5, sagebrush would continue to provide adequate woody cover, structure, and forage for many shrub-obligate and dependent species; however, upland habitat quality overall would continue to be limited by the lack of the deep-rooted, tall-statured perennial bunchgrass component of the herbaceous understory.

Riparian habitat

Under Alternative 1, in all pastures, many of the riparian habitats (those at PFC) would continue to provide adequate habitat for riparian dependent species. Riparian habitats that are functional at Risk would continue to provide a less productive habitat that is at an increased risk for further degradation from overutilization and bank alteration.

Sage-grouse habitat

Pastures 2 and 4 would continue to provide productive sage-grouse habitat by having adequate canopy cover and heights of sagebrush and perennial grasses and forbs. Pastures 1, 3, 5, 6, and 7 would continue to have reduced canopy cover of deep-rooted perennial grasses and forbs; nesting and brood-rearing success could be lower due to insufficient cover and or forage.

Under Alternative 1, the Whitehorse/Antelope allotment would not make progress toward meeting Standard 8.

3.3.20.2.1.6 Social and Economic Values

See Section 3.2.8.2 above.

3.3.20.2.1.7 Cultural Resources

None of the recorded cultural sites in the allotment are being adversely affected by livestock activities. No known historic properties would be affected by this alternative.

3.3.20.2.2 Alternative 2

3.3.20.2.2.1 Vegetation

Under Alternative 2, the permittee made application to maintain active authorized use at 4,345 AUMs and to implement the grazing schedule consistent with recent livestock management practices that are identified under Alternative 1. Standard 4 was not met in pastures 1, 2, and 5 of the Whitehorse/Antelope allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. At the same time, Standard 4 was met in pastures 3, 4, 6, and 7.

Impacts to health and vigor of native perennial bunchgrasses, preferred forage plant species, would occur with annual scheduled growing season use in pastures 1 and 2 of the allotment (Appendix E). Utilization levels under Alternative 2 would be expected to exceed the light to moderate utilization of key forage plants documented with recent management as a result of the significantly greater number of AUMs authorized, 140 percent of use authorized under Alternative 1 (See Appendix B). This level of utilization would be expected to contribute toward failure to meet Standard 4, especially when those utilization levels occur with use during the active growing season. The combination of frequent grazing use during the active growing season that results in utilization levels exceeding the light to moderate level would limit improvement in upland vegetation condition and trend.

Under Alternative 2, progress toward meeting Standard 4 would not occur due to frequent grazing use scheduled during the active growing season in pastures 1 and 2, pastures that annually receive less than 13 inches of effective precipitation and lack soil moisture for regrowth following scheduled grazing use. Additionally, the ORMP objective to improve health and condition of vegetation would not be met.

3.3.20.2.2.2 Soils

Alternative 2 for the Whitehorse/Antelope allotment is similar to Alternative 1 and would provide yearly deferment from spring grazing for pastures 2, 3, 4, 5, 6, and 7 that would reduce physical impacts during the wettest period. Annual critical growing season use is annually deferred for pastures 4, 5, 6, and 7 and would be beneficial for soils. On the other hand, while pastures 1, 2, and 3 would not only be grazed during the critical growing season, the allotment would see an increase in livestock numbers and active AUMs. This would not provide opportunity to increase soil stability due to the ability of native plant communities to remain healthy, vigorous, and productive during active growth. As a whole, the allotment would not make progress toward improving soil and hydrologic function with Alternative 2 compared to Alternative 1 (see Section 3.2.2.3).

3.3.20.2.2.3 Riparian/Water Quality

Under Alternative 2 (for details, see Sections 2.2.2 and 2.4.20.2), the permittee proposes to graze pasture 1 of the Whitehorse/Antelope allotment during the spring annually; pastures 2 and 3 during the summer annually; pastures 4, 5, and 7 during the fall annually; and pasture 6 during the summer and fall annually. Consequently, within the allotment, 17.5 miles of perennial stream, 122.7 miles of intermittent/ephemeral stream, and 23 springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing (Table RIPN-8). Recent actual use reported (Appendix B) indicates a similar pattern of use among the pastures, and the riparian Standards are not being met.

Under current management, the Whitehorse/Antelope allotment is not meeting the Standards associated with the riparian-wetland resources. Since the allotment would be used during the same seasons and the use would be at the discretion of the permittee, the impacts from spring, summer, and fall grazing per Table RIPN-8 and Section 3.2.3.1 would continue. Additionally, the active AUMs under Alternative 2 would be 42 percent greater than those proposed under Alternative 1. Therefore, the allotment would not meet the riparian-wetland Standards under this alternative.

3.3.20.2.2.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.20.2.2.5 Wildlife and Special Status Animals

Under Alternative 2 the grazing practices that resulted in the current condition would continue. Additionally the active AUMs for the allotment would be increased 140 percent.

Upland habitat

This would result in increased grazing pressure on upland perennial grasses and forbs during the active growing season which would reduce their vigor and reproductive capability. This would decrease the cover and forage base for shrub steppe dependent species.

Riparian habitat

Riparian habitats would receive increase grazing pressure during the hot season when livestock already loaf there. This would result in increased bank alteration and decreased vegetative cover. Both of which destabilize riparian habitats making them more susceptible to damage from flood events. Riparian

habitats would decrease in size and extent which would reduce the forage and cover for riparian-dependent species.

Sage-grouse habitat

Sage-grouse habitat both in upland and riparian areas would have decreased forage base and nesting/hiding cover from increased grazing pressure on perennial grasses and forbs.

Under Alternative 2 the Whitehorse/Antelope allotment would not make progress toward meeting Standard 8.

3.3.20.2.2.6 Social and Economic Values

See Section 3.2.8.3 above. There would be more AUMs and cattle, the grazing season would be longer for pasture 1, and pasture 7 could be used instead of rested. There could be additional revenue from the sale of animals, but also additional labor and feed costs from the new pasture rotations.

3.3.20.2.2.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.20.2.3 Alternative 3

3.3.20.2.3.1 Vegetation

Standard 4 was not met in pastures 1, 2, and 5 of the Whitehorse/Antelope allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. At the same time, Standard 4 was met in pastures 3, 4, 6, and 7.

Under Alternative 3, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 1 of 3 years. In addition, the intensity of grazing use would be limited to less than 20 percent at the end of the active growing season when grazing is authorized between 5/1 and 6/30. Additionally, a reduction in the number of cattle that graze within the allotment would result in an allotment-wide stocking rate of approximately 25 acres per AUM compared to the current permit with 8.7 acres per AUM and 21.0 acres per AUM under the current situation (Alternative 1), and would result in a reduction in the intensity of grazing use occurring in all pastures. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, limits to the intensity of grazing use during the active growing season and 1 in 3 years of exclusion of use during the active growing season would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E.

Progress would be made toward meeting Standard 4 in pastures 1 and 2 and the ORMP objective to improve vegetation health and condition.

3.3.20.2.3.2 Soils

Alternative 3 would provide a minimum of 1 out of 3 years of deferment from spring grazing and critical growing season use. This would be beneficial to pasture 1 but add spring use every two years to pastures 2 and 3 compared to Alternative 1 that could result in physical impacts to soils during the wettest period of the year. However, pastures 2 and 3 would benefit from additional deferment from critical growing season use.

Active use over previous years has continuously excluded sensitive spring grazing in pastures 2 and 3 and started in mid-July under Alternative 1. The implementation of Alternative 3 would provide fewer

restrictions for upland soils, increase grazing intensity, and lessen the opportunity to improve soil cover and bare ground, resulting in greater susceptibility to accelerated erosion. As a whole, progress toward maintaining, meeting, and improving soil and hydrologic function proposed with Alternative 3 would occur for pasture 1, 4, 5, and 6 but not for pastures 2 and 3. Consequently, the allotment would not move toward improving watershed health with Alternative 3 when compared to Alternative 1 (see Section 3.2.2.4).

3.3.20.2.3.3 Riparian/Water Quality

Under Alternative 3 (for details, see Sections 2.2.3 and 2.4.20.3), the Whitehorse/Antelope allotment would be available to graze. Consequently, within the allotment, 17.5 miles of perennial stream, 122.7 miles of intermittent/ ephemeral stream, and 23 springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing (Table RIPN-8) alternately among the pastures and years. Recent actual use reported (Appendix B) indicates a similar pattern of use among the pastures, and the riparian Standards are not being met.

Under current management, the Whitehorse/Antelope allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that incorporates at least one year of riparian area growing season deferment every three years. Thus, the impacts from spring and summer grazing per Table RIPN-8 and Section 3.2.3.1 would continue 2 of 3 years in pastures 1, 2, 3, and 6; 1 of 3 years in pastures 4 and 7; and would be eliminated in pasture 5. However, the impacts from fall grazing would occur 1 of 3 years in pastures 1, 2, 3, and 4; and 2 of 3 years in pasture 7. Additionally, the changes in season of use would result in a 65 percent reduction in active AUMs over the 10 year permit compared to those currently permitted. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.20.2.3.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.20.2.3.5 Wildlife and Special Status Animals

In comparison to Alternative 1, grazing under Alternative 3 would provide deferment of grazing during the upland growing season from one to three years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 3 would provide deferment of grazing during the hot-season from one to two years in any consecutive 3-year period in pastures with riparian habitats. Upland and riparian utilization and trampling limits also would be implemented in select pastures and years to mitigate impacts of grazing during the active growing and hot seasons. These timing constraints in conjunction with a conservative stocking rate would result in an active AUM reduction of about 15 percent (Appendix C).

Upland habitat

In the uplands, herbaceous understory conditions would improve with less pressure from livestock grazing in the growing season, and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. The level of improvements in perennial herbaceous understory vegetation would be commensurate with the number of years of grazing deferment during the growing season.

Riparian habitat

Under Alternative 3 riparian habitats in the allotment would receive grazing deferment during the hot-season one or two years in any consecutive 3-year period which would result in less use during deferment years. Deferment of hot-season grazing would allow for increased growth, reproduction, and establishment of riparian vegetation. This would provide increased forage for sage-grouse, cover for

spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian-dependent wildlife species.

Sage-grouse habitat

Increased vigor and reproductive capability in perennial grasses and forbs would increase both cover and forage for sage-grouse. Areas where sage-grouse habitat contains the necessary cover and forage would be maintained and areas that currently lack sufficient cover and forage would improve toward providing sufficient cover and forage. This would increase nest success and brood survival.

Under Alternative 3, the Whitehorse/Antelope allotment would make progress toward meeting Standard 8.

3.3.20.2.3.6 Social and Economic Values

See Section 3.2.8.4 above. There would be fewer AUMs and cattle, and thus reduced revenue from the sale of animals. In addition, new pasture rotations that incorporate some deferred grazing, some rest, and some changes in season of use could lead to additional labor and feed costs.

3.3.20.2.3.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.20.2.4 Alternative 4

3.3.20.2.4.1 Vegetation

Standard 4 was not met in pastures 1, 2, and 5 of the Whitehorse/Antelope allotment due to current livestock management actions that were not in conformance with guidelines. Guidelines recommend application of grazing management practices that provide periodic rest or deferment during critical growth stages. At the same time, Standard 4 was met in pastures 3, 4, 6, and 7.

Under Alternative 4, the season of use would be limited to exclude grazing during the active growing season (5/1 to 6/30) in 2 of 3 years. In addition, the alternative delays the initiation of annual grazing in the allotment until May 15, as opposed to March 1 under the existing permit. The delayed turnout is consistent with reported actual use in the current situation (Alternative 1). In addition, the intensity of grazing use would be limited by a reduction in the number of cattle that graze within the allotment from 298 under the current situation to 143 under Alternative 4, resulting in no pasture used heavier than would occur at a stocking rate for all pastures that would result in less than 21 acres per AUM. The stocking rate would also not result in less than 27 acres per AUM in the lower elevation pastures 1, 2, or 3 that have lower resilience to disturbance. Stocking rates under Alternative 4 compare to the existing permit with 8.7 acres per AUM allotment-wide and to the current situation (Alternative 1; the maximum recent actual use reported) with 21.0 acres per AUM. The reduced intensity of grazing use, especially when that use occurs during the active growing season, would provide greater opportunity for cool-season bunchgrass plants to complete their annual growth cycle in the absence of grazing or with limited grazing and the need to regrow. In combination, the delayed turnout in the spring, limits to the intensity of grazing use during the active growing season, and 2 in 3 years of exclusion of use during the active growing season, would allow cool-season bunchgrass species to regain health and vigor as detailed in Appendix E of the EA.

Progress would be made toward meeting Standard 4 in pastures 1, 2, and 5 as well as toward meeting the ORMP objective to improve vegetation health and condition throughout the allotment.

3.3.20.2.4.2 Soils

Alternative 4 would provide deferment or rest from spring grazing every year and reduce physical impacts to soils during the wettest and most susceptible period. Additional benefits are provided from deferment or rest from critical growing season use for a minimum of 2 out of 3 years that promotes the ability of native plant communities with an opportunity to improve and respond with increased soil cover, decreased bare ground, and reduced susceptibility to accelerated erosion. Whereas Alternative 3 would be less restrictive for upland soils and increase grazing intensity in some pastures, Alternative 4 would provide seasonal restrictions along with adjustments in livestock numbers, active AUMs, and stocking rates that would benefit soils by limiting overall physical impacts from hoof action and utilization of plants in all pastures. As a whole, Alternative 4 would allow the greatest opportunity for making progress toward maintaining, meeting and improving soil and hydrologic function over the life of the permit compared to Alternatives 1, 2, and 3, though not as much as with Alternative 5 (see Section 3.2.2.5).

3.3.20.2.4.3 Riparian/Water Quality

Under Alternative 4 (for details, see Sections 2.2.4 and 2.4.20.4), the Whitehorse/Antelope allotment would be available to graze. Consequently, within the allotment, 17.5 miles of perennial stream, 122.7 miles of intermittent/ ephemeral stream, and 23 springs would be affected by the impacts associated with the spring, summer, and fall seasons of grazing (Table RIPN-8) alternately among the pastures and years. Recent actual use reported (Appendix B) indicates a pattern of use similar to that described under Alternative 1 has occurred, and the riparian Standards are not being met.

Under current management, the Whitehorse/Antelope allotment is not meeting the Standards associated with the riparian-wetland resources. The allotment would be managed under a defined 3-year grazing schedule that incorporates at least one year of riparian area growing season deferment as well as one year of rest every three years. Thus, the impacts from spring and summer grazing per Table RIPN-8 and Section 3.2.3.1 would continue 1 of 3 years in pastures 1-4, 6 and 7 and would be eliminated in pasture 5. However, the impacts from fall grazing would occur 1 of 3 years in pastures 1-6 and 2 of 3 years in pasture 7. Additionally, the changes in season of use would result in a 56 percent reduction in active AUMs over the 10 year permit compared to the current situation. Therefore, the allotment would make progress toward meeting the riparian-wetland Standards under this alternative.

3.3.20.2.4.4 Special Status Plants

See Section 3.1.4 for specific information on this allotment and alternative.

3.3.20.2.4.5 Wildlife and Special Status Animals

Grazing under Alternative 4 would provide rest and/or deferment of grazing during the upland growing season from two to three years in any consecutive 3-year period in all pastures in the allotment. In addition, Alternative 4 would provide rest and deferment of grazing during the hot-season to prevent overuse and degradation two years in any consecutive 3-year period in pastures with riparian habitats. These timing constraints in conjunction with a conservative stocking rate would result in an active AUM reduction of 56 percent as compared to Alternative 1 (Appendix C).

Under Alternative 4, upland and riparian habitats would have less pressure than any of the other grazing alternatives. With the exception of areas affected by continued juniper encroachment, upland shrub steppe communities would provide productive habitats for sage-grouse and other dependent species in the majority of the allotment. Under Alternative 4 effects from grazing management in all pastures would be similar to those described in Alternative 3, but upland and riparian habitat improvements would occur more rapidly because these pastures would periodically receive rest from grazing and AUMs would be lower when grazing would occur. Without grazing pressure from livestock for an entire year herbaceous understory conditions in the uplands would improve and bunchgrasses and perennial forbs would be more

vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. In addition, riparian plants would grow to their potential, reproduce, and establish new plants within riparian habitats. This would result in larger more well developed riparian areas which would provide increased succulent forage for sage-grouse, cover for spotted frogs, stream shading for redband trout, and vegetation community diversity for all riparian dependent wildlife species.

Under Alternative 4, upland and riparian wildlife habitats within the allotment would progress toward meeting Standard 8.

3.3.20.2.4.6 Social and Economic Values

See Section 3.2.8.5 above. There would be fewer AUMs and cattle, and thus reduced revenue from the sale of animals. In addition, new pasture rotations that incorporate some deferred grazing, even more rest, and additional changes in season of use could lead to additional labor and feed costs.

3.3.20.2.4.7 Cultural Resources

The effects to historic properties would be the same as Alternative 1.

3.3.20.2.5 Alternative 5

3.3.20.2.5.1 Vegetation

Under Alternative 5, in the absence of authorized grazing use within the allotment, impacts from active growing season use and intensities that are identified as adverse in Appendix E would be eliminated. Cool-season bunchgrass species would be provided opportunity to regain health and vigor. Progress would be made toward meeting Standard 4 as well as toward meeting the ORMP objective to improve vegetation health and condition.

3.3.20.2.5.2 Soils

The implementation of this alternative would have the greatest benefit for upland soil resources because soils would make progress toward meeting Standard 1 (see Section 3.2.2.6). Additionally, the ORMP objective to maintain or improve watershed health and condition would be achievable. As a whole, Alternative 5 would make the most rapid progress toward improving soil and hydrologic function over the life of the permit compared to the previous alternatives.

3.3.20.2.5.3 Riparian/Water Quality

See the impacts described for all allotments under Alternative 5 in Section 3.2.3.6.

3.3.20.2.5.4 Special Status Plants

See 3.3.1.1.4 for specific information on this allotment and alternative.

3.3.20.2.5.5 Wildlife and Special Status Animals

Under Alternative 5, upland and riparian habitats would be rested from grazing for 10 years. Upland habitat would improve with no pressure from livestock grazing, and bunchgrasses and perennial forbs would be more vigorous and provide increased forage and cover for upland wildlife species including sage-grouse. Riparian habitat would develop to its potential for wildlife habitat as herbaceous and woody species grow, reproduce, and establish. This would result in larger more well developed riparian areas that would provide improved habitat for riparian dependent species such as migratory birds, sage-grouse, spotted frogs, and redband trout. Terrestrial and aquatic wildlife habitat objectives would be met and there would be rapid progress toward meeting Standard 8 (Threatened and Endangered Plants and Animals), especially in riparian habitats.

3.3.20.2.5.6 Social and Economic Values

Removing authorized grazing on the allotment for the duration of the 10-year grazing permit could have substantial social and economic impacts to the permittees and the local community, as discussed in Section 3.2.8.6 above.

3.3.20.2.5.7 Cultural Resources

With the absence of livestock grazing, no cultural resources or historic properties would be affected.

3.4 Cumulative Effects

3.4.1 Past, Present, and Reasonably Foreseeable Actions/Activities Common to All Allotments

Cumulative effects are presented in this Section to capture projects or actions common to all resources (Tables CMLV 1, 2 & 3). Any additional projects or actions not described in this Section will be described in the Cumulative Effects Sections by resource below.

Livestock Grazing Management

Several allotments within and adjacent to the Cumulative Effects Analysis Area (CEAA) for any given resource have recently had permits issued or are under review for renewal according to the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management, as listed in Table CMLV-3 below. The decisions associated with livestock grazing permits are assumed to meet or move allotments toward meeting the Standards required by the aforementioned regulations.

Climate Change

Changes in greenhouse gas levels affect global climate. Ring et al. (2012) reviewed scientific information on greenhouse gas emissions and climate change, including the four Assessment Reports of the Intergovernmental Panel on Climate Change between 1990 and 2007, and recognized a growing consensus within the scientific community that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations. While the additional analysis by Ring et al. (2012) included data through 2010 and supports the earlier conclusions by others.

A number of researchers, including Lapage et al. (2012), have recognized the potential impact to agricultural production that climate change scenarios, including altered temperature and precipitation regimes at the regional level, may induce. These researchers also recognize the inherent variability within and appropriate application of global and regional climate models. Neilson et al. (2005), in summarizing output from seven models and possible scenarios of regional climate change in the Great Basin, identified long-term trends toward greater precipitation and warmer temperatures, although they noted inter-annual and inter-decadal variability that could account for short-term records that may differ. A similar summary of the available studies and models is presented by Chambers and Pellant (2008).

Possible consequences to vegetation communities resulting from climate change in the Great Basin include a dramatic increase and expansion of woody frost-sensitive species at the expense of shrubland and a corresponding increase in fire. Bradley (2009) modeled the consequences that altered summer precipitation and winter temperature could have on the potential risk of cheatgrass expansion or contraction, noting that climatic change will affect the potential geographic distribution of cheatgrass and will likely affect other plant invaders as well. Ash et al. (2012) identified that adaptation options will be required in different rangeland regions in response to climate change to enhance the development of sustainable livelihoods with both social and ecological resilience. Technical input to the 2013 National

Climate Assessment identified the process of adjustment to actual and expected climate and its effects in order to moderate harm or exploit beneficial opportunities on biodiversity, ecosystems, and ecosystem services (Staudinger, et al., 2012). Beschta et al. (2012) recommended strategies for western public lands to reduce anthropogenic stressors of terrestrial and aquatic ecosystems that may add to stressors from climate change, primarily reduction or elimination of ungulate use to help native species and ecosystems survive in an altered environment.

With consideration for anticipated stressors induced by climate change, appropriate livestock management practices that improve and maintain healthy and functioning vegetation communities that provide for proper nutrient cycling, hydrologic cycling, and energy flow remains the primary adaptation against changing precipitation and temperature regimes.

3.4.1.1 Actions/Activities Common to Cumulative Effects Analysis Area 1

The CEAA 1 was developed to capture projects or actions common to all resources that identify the allotments as the spatial scale necessary to incorporate all additive effects (Tables CMLV-1 and Maps CMLV-1 and -2). Those resources that utilize the allotments as their spatial scale are identified and described below by resource. The figures in the following table of past, present, and reasonably foreseeable future actions within the analysis area relevant to cumulative impacts were calculated using BLM GIS data. The data used represent the best available information and the calculations based on the data are approximate.

Table CMLV-1: Past, present, and foreseeable activities by allotment CEAA for the Group 3 allotments

Allotment Name	Past & Present Actions*	Wildfire (acres)	Noxious Weed Infestation Points	Agriculture (acres)	Roads (miles)	Livestock Trailing (miles)	Range Improvements		Mining claims & Gravel Pits (acres)	Powerline (miles)
							# of Reservoirs and Troughs	Exclosures (acres)		
Alder Creek FFR	P & P	0	1	0	4	2	0	0	0	0
Boone Peak	P & P	28	0	0	32	0	3	0	44	0
Box T	P & P	678	29	3	27	6	12	8	0	0
Bridge Creek	P & P	0	0	0	4	0	0	0	96	0
Brown's Creek	P & P	1	36	0	10	9	1	0	0	0
Garrett FFR	P & P	879	15	108	8	1	0	0	0	0
Hart Creek	P & P	211	42	31	66	22	2	1	0	.27
Josephine FFR	P & P	0	0	0	9	1	1	0	0	0
Lone Tree	P & P	202	0	2	22	3	2	0	0	0
Louisa Creek	P & P	2,129	32	0	20	1	8	51	0	0
Meadow Creek FFR	P & P	0	0	1	5	0	1	0	0	0
Moore FFR	P & P	0	1	0	2	0	1	0	0	0
Munro FFR	P & P	0	0	0	1	0	1	0	0	0
Quicksilver	P & P	1,367	26	0	5	0	0	0	0	0
Red Mountain	P & P	262	64	0	47	19	1	0	0	0
Stahle FFR	P & P	0	1	0	1	0	0	0	0	0
Steiner FFR	P & P	0		530	19	1	2	0	0	0
Toy	P & P	1,568	59	3	24	8	6	0	79	0
West Castle	P & P	0	38	46	48	0	3	0	439	1.36
Whitehorse/ Antelope	P & P	15,720	211	4	61	17	8	10	0	0
Total		23,045	555	726	416	91	52	71	659	1.63

*all of the reasonably foreseeable actions are unknown or not planned unless otherwise indicated

3.4.1.2 Actions/Activities Common to Cumulative Effects Analysis Area 2

The CEAA 2 was developed to capture projects or actions common to all resources that identify the watersheds as the spatial scale necessary to incorporate all additive effects (Tables CMLV-2 and Maps CMLV-1 and -2). Those resources that utilize the watersheds as their spatial scale are identified and described below by resource. The figures in the following table of past, present, and reasonably foreseeable future actions within the analysis area relevant to cumulative impacts were calculated using BLM GIS data. The data used represent the best available information and the calculations based on the data are approximate.

Table CMLV-2: Past, present, and foreseeable activities by watershed CEAA for the Group 3 allotments

Type of Activity	Past & Present Actions*	Watersheds			
		Big Boulder Creek	Castle Creek	Rock Creek	Swan Falls-Snake River
Grazing Allotments	P & P ¹⁷⁹	29	24	23	18
Wildfire (instances)	P & P	10	17	7	89
Wildfire (acres)	P & P	10,028	22,410	5,316	49,965
Noxious Weed Infestation Points	P & P	248	839	303	724
Agriculture (acres)	P & P	637	5,522	1360	13,294
Roads (miles)	P & P	222	574	232	795
Livestock Trailing (miles)	P & P	26	81	25	2
Range Improvements – Reservoirs and Troughs	P & P	23	73	66	19
Range Improvements - Exclosures (acres)	P & P	5	379	85	66
Mining Claims and Gravel Pits (acres)	P & P	0	440	219	331
Powerline (miles)	P & P	1	42	84	128

*all of the reasonably foreseeable actions are unknown or not planned unless otherwise indicated

3.4.2 Resource/ Alternative Specific Cumulative Effects

3.4.2.1.1 Vegetation

3.4.2.1.1.1 Resource-Specific Analysis Area

The vegetation resource cumulative impacts analysis area (CEAA) was set to the Toy Mountain Group allotment boundaries (Map CMLV-1), which covers 175,633 total acres of public, private, and state land. Past, present and reasonably foreseeable future actions outside the Toy Mountain Group allotment boundaries will have little direct or indirect impact on vegetation resources in the allotment (see tables CMLV-1 in Section 3.4 for a list of all actions) and similarly, effects to vegetation resources under each alternative analyzed will not extend beyond the allotment boundaries. Plants are not transient over long distances because they are rooted in the soil. An exception is wind-distributed seeds that can travel extended distances. Indirect effects of actions affecting vegetation resources are spatially confined to a short distance from the action.

The timeframe for cumulative impacts analysis considers activities from past actions which have influenced current conditions; activities planned and authorized to occur within the next 3 years, and the administrative term of grazing permits (10 years).

Past activities that have affected vegetation resources in the cumulative effects analysis area include wildfire; noxious weed incursion and control actions; agricultural activities; road construction and maintenance; livestock grazing and trailing; range project construction and maintenance, as well as associated disturbance by livestock; mineral development activities, including material sites; utility corridors, including power lines, and recreation. The impacts of these activities/events and the resultant effects on vegetation resources are summarized in Table VEG-66, and briefly discussed below.

Table VEG-66: Past Activities and Events in Vegetation Resources Cumulative Effects Area

Activity or Event	Timeframe	Indicator/ Degree	Extent	Magnitude of Effect on Vegetation	Type of Effect
Wildfire	Fire records 1961-2013	16 wildfires totaling 23,045 acres.	Approximately 13% of the CEAA with some locations burning more than once during the 5 decade period.	Moderately high within burn area diminishing through time with recovery; very low across entire CEAA.	Shift from juniper or shrub/grass-dominated to shrub/grass or grass plant community (invasive annual species may dominate for a period, especially at lower elevations).
Wildfire Suppression Activities	Ongoing, continuous	Boundaries of 16 wildfires, as noted above	Associated with wildfire boundaries, typically associated with roads.	Low: limited acreage associated with wildfire and typically rehabilitated to restore vegetation	Vegetation removal to create fire-lines associate with roads, natural fire-breaks, and additional fire-lines created with heavy equipment.
Prescribed Fire	1982 to 1994	12,801 acres burned	Approximately 7 percent of the CEAA, all occurring approximately 2 decades ago	Moderately high within burn area diminishing through time with recovery	Dominance of undesirable species, including juniper and sagebrush, diminished; associated fire impacts to other species; reference site vegetation recovery with time
Noxious Weed Treatment	Ongoing, continuous	470 sites identified with herbicide or mechanical treatment of most	Localized	Low	Herbicide and mechanical treatment to control noxious weeds also impacts a few adjacent native plants; native plant communities protected from noxious weed invasion

Activity or Event	Timeframe	Indicator/ Degree	Extent	Magnitude of Effect on Vegetation	Type of Effect
Agriculture	Ongoing activities that have occurred in most cases since the early 20th century of longer	Approximately 726 acres total or < 1% of CEAA.	In several blocks within CEAA.	High in localized areas; moderately low across entire CEAA.	Irrigated crop fields replacing native vegetation
Roads and Trails	Roads nearly all in place before 1980; few additions each decade	Approximately 416 miles of constructed roads, created two-tracks, and trail, all native surface (gravel/dirt)	Distributed across CEAA	High on roads/ trails, moderate throughout CEAA.	Maintenance of constructed roads removes vegetation in the road prism; Use of all roads reduces vegetation cover; introduction of noxious and invasive weeds
Livestock Grazing	Ongoing, continuous	20 active allotments; 19,429 authorized active AUMs (all allotments)	Across virtually entire analysis area except some agriculture fields	Moderate	Species composition shifts to less palatable plants and fewer large bunchgrasses, especially with improper livestock management practices
Trailing	Spring and/or Fall	Approximately 97 miles with a maximum width of 0.25 miles (15,520 acres)	Limited to identified trailing routes along roads and two-tracks (see NEPA document DOI-BLM-ID-B030-2012-0011-EA)	Low to moderate (herding) at the CEAA level.	Localized short term grazing of vegetation and surface disturbance; introduction of noxious and invasive weeds
Fences	Most constructed before 1980; a few additions each decade	Approximately 390 miles of fence total (may not include all fence on ownership other than public land)	Distributed across analysis area, but cumulatively covering a small percentage of area	Low	Short-term, localized construction & maintenance disturbance; ongoing cattle concentration adjacent to fences with increased grazing and trampling of vegetation compared to areas more distant from fences
Troughs, Reservoirs	Most constructed before 1980; a few additions each decade	Estimated 52 (This number does not represent all water developments on private or state lands)	Distributed across CEAA, but cumulatively covering a small percentage of CEAA	Low	Short-term, localized construction & maintenance disturbance; ongoing cattle concentration adjacent to developed water with increased grazing and trampling of vegetation compared to areas more distant

Activity or Event	Timeframe	Indicator/ Degree	Extent	Magnitude of Effect on Vegetation	Type of Effect
					from developed water
Mineral Development, Including Material Sites	Most mining activity and material sites developed prior to 1980	659 acres of mining claims and gravel pits	Distributed across CEAA, but cumulatively covering a small percentage of CEAA	Moderate	Mining claim development and gravel pit removal of materials results in ongoing localized surface disturbance with small acreage
Utility Corridors (Power line)	Most constructed prior to 1980	1.63 miles	Utility corridor associated with roads also used for maintenance activities	Low	Periodic maintenance includes access for equipment on associated roads and two-tracks; periodic vegetation treatment to protect structures.
Recreation	Ongoing, continuous	Moderate fall use of roads/trails for hunting (see Roads and Trails) and, to a lesser degree, bird-watching, flower-watching (spring), and camping.	Distributed across CEAA	Low on roads/trails	Localized vegetation trampling (beside roads/trails), introduction of noxious and invasive weeds

The spatial extent of these actions and events was calculated using the best available BLM GIS data. The terms for magnitude of vegetation effects are defined as:

Low – activity affects only a very small percentage of vegetation in the area, or has only a temporary effect on vegetation in a larger area;

Moderate – activity affects more than a small percentage but less than a majority of the area with noticeable changes in vegetative structure, or affects a majority of the area with changes to vegetative species composition but not necessarily structure; and

High – activity affects vegetation composition and structure within the majority of the area.

Livestock grazing is the dominant land use activity in the area. Vegetation in the CEAA and surrounding area has been affected by livestock grazing, because livestock selectively eat larger bunchgrasses, influencing the competitive advantage for some palatable species and altering the species composition over time. Heavy grazing in the Owyhee Uplands, including the Toy Mountain Group allotments, beginning in the late 1800s, has altered the vegetation composition (reduced large bunchgrass dominance; and increased Sandberg bluegrass, juniper, and invasive grasses). Historic heavy grazing practices were

reduced in the latter half of the 1900s, allowing some improvement in vegetation composition toward reference site conditions, with reductions in the intensity of use and the frequency of active growing season use. Additionally, a variety of range projects such as spring developments, fences, cattle-guards, and troughs have been implemented across the landscape to aid in the implementation of appropriate livestock management practices. Construction of these projects removed vegetation or disturbs the soil surface in localized areas, while periodic maintenance activities renew a smaller portion of that original disturbance.

Wildfire is a disturbance factor that is recognized in the natural variability of described reference site conditions for salt desert shrub, sagebrush/bunchgrass, and mountain shrub ecological sites. Fire return intervals have been lengthened within some portions of the CEAA with reductions in fuel loads and implementation of suppression activities resulting in a vegetation change in which juniper has a much higher representation than at reference condition where that potential is present. At the same time, human caused fire and altered fuels resulting from human induced change in vegetation composition have either lengthened or reduced fire return intervals, further altering vegetation composition away from reference site conditions. The location and acreage where indirect impacts have led to declining plant community health and conditions due to altered fire return intervals cannot be quantified for the CEAA. However, it has been estimated that within potential juniper woodland areas in Owyhee County, juniper historically occupied approximately 10 percent of the area, but currently occupies 55 percent of those areas (Major, in review). Wildfires have collectively burned less than 13 percent of the analysis acreage since 1961. The largest direct impact from wildfire to native sagebrush-steep vegetation communities is the reduction or removal of juniper and sagebrush.

Changes in species composition, with shifts toward less palatable species and the presence of non-native plants, are also evident across the Toy Mountain Group allotments, although few areas dominated by non-natives exist. Synergistic interactions of these changes over time have stressed the ecosystem (Miller & Narayanan, 2008). An example of these interactions is the combination of increased juniper and selective grazing both affecting large bunchgrasses.

Roads (trails/permanent/access for utility) and other recreation activities have extensively fragmented native vegetation in the landscape by creating bare ground and weedy openings within the sagebrush steppe plant communities. Vehicles and travel-ways act as noxious and invasive weed vectors for the spread of weed seed and one of a number of factors that disturb the soil surface and provide sites for weed establishment and spread. Ongoing noxious weed treatment (usually spot herbicide application) helps to keep these invaders from spreading into native plant communities. Noxious weeds are uncommon within the CEAA.

Agricultural lands make up less than 1 percent of the cumulative effects analysis area and include riparian floodplains where native vegetation has been converted to grass hay meadows, grain, alfalfa, or other irrigated crops. Within these agricultural areas, native vegetation has been entirely replaced by cultivated species.

The combination of activities described above, including wildfire followed by inappropriate livestock management practices and other activities, has altered vegetation within the cumulative effects analysis area. The shrub/large bunchgrass plant communities expected under reference conditions are limited (see Owyhee Resource Management Plan and Final Environmental Impact Statement Table VEGE-2). The shrub component has been lost in some areas (insects, agriculture, roads and other developments, frequent wildfire), while the large bunchgrass component has been diminished throughout most of the area. Large bunchgrasses (and in some cases shrubs) have decreased substantially or have been mostly replaced by Sandberg bluegrass, bulbous bluegrass, annual grasses, and other annual weeds. Localized areas of juniper dominance have suppressed or displaced native sagebrush and bunchgrass vegetation.

In combination, past, present and reasonably foreseeable future actions that have led toward improving vegetation health and conditions include wildfire approximating the natural fire return interval and intensity (controlling juniper), limited prescribed fire for juniper control on 12,801 acres or fewer, and ongoing control of noxious weeds that prevent new sites from expanding and replacing native vegetation. In addition, where appropriate livestock management activities have been implemented to limit the frequency of active growing season use and also high intensities of use, residual native vegetation resources have been allowed to recover health and vigor and restore conditions toward reference site conditions.

Actions that have led toward declining vegetation health and vigor include the indirect effects of concentrated livestock activity adjacent to rangeland developments (water developments, fences), wildfire at intervals inconsistent with natural return intervals or at higher intensity due to altered vegetation composition and fuel loading, ongoing disturbance from roads/trails maintenance and use, and retention of agricultural lands dominated by irrigated crops.

Reasonably foreseeable activities within the cumulative effects analysis area include livestock grazing permit renewals that implement appropriate livestock management practices limiting the frequency of active growing season grazing and high intensities of grazing. Additionally, transportation management planning for Owyhee Field Office will implement actions to limit the development of new routes and ensure that vehicular use does not unnecessarily impact vegetation resources or contribute to the introduction and spread of weeds or soil surface disturbance. No parcels for state land exchange are anticipated.

Grazing permit renewals are expected to maintain or improve vegetation conditions within the analysis area. No additional fences or range developments are anticipated from these renewals. Expanding populations in the Treasure Valley, the increasing popularity of OHVs consistent with travel management planning, and increased non-motorized use within the CEAA, are together expected to create additional disturbances to vegetation resources. Because past recreation has had very little effect on vegetation in the cumulative effects area and because of the distance from major population areas, impacts from current and future recreation is expected to occur at a relatively low magnitude. As a result, impacts to vegetation resources from recreational activity are anticipated to remain stable rather than increase

3.4.2.1.1.2 Cumulative Effects Common to All Grazing Alternatives

As a result, past present and reasonably foreseeable future actions identified above and influencing localized vegetation conditions are primarily the product of the direct and indirect influence of historic grazing practices on current vegetation conditions. Vegetation resources are expected to remain in their current condition or improve slightly toward reference site conditions with implementation of appropriate livestock management practices. Plant communities would continue to consist of a coarse mosaic of salt desert shrub, big sagebrush, and mountain shrub communities with a depressed composition of native deep-rooted bunchgrass species with potential for recovery over the long term. More grazing tolerant native bunchgrasses, including Sandberg bluegrass and squirreltail, would remain and include areas of localized juniper dominance. The CEAA overlaid by an extensive road and trail system, with limited acreage of developed agriculture, would contribute toward vegetation communities that do not meet reference conditions. Noxious weeds are expected to continue to be minimal throughout the CEAA, and not increase with ongoing cooperative efforts to control their introduction and spread. Localized effects from OHVs and concentrated grazing activities associate with project locations may also occur.

The ORMP vegetation management objective to improve unsatisfactory and maintain satisfactory vegetation health and condition defines the cumulative effects threshold to limit downward trend away

from the native perennial vegetation composition defined in the reference site of ecological site descriptions.

Grazing activities analyzed in this EA would contribute toward cumulative effects on upland vegetation and noxious and invasive weeds by incrementally influencing plant species composition and plant community biodiversity in the Toy Mountain Group allotments, as described in the allotment-specific direct and indirect effects. The incremental contribution to the composition of vegetation resources within these twenty allotments from authorized as they relate toward meeting the Idaho Standards for Rangeland Health, Standard 4 –Native Plant Communities or Standard 5 – Seedings as applicable, are displayed in Table VEG-67 and are discussed below by alternative. In addition, the number of authorized active AUMs is used as an indicator of the magnitude of effects.

Table VEG-67: The incremental contribution to vegetation composition within implementation of alternatives

Allotment	Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs
Alder Creek FFR	Not met	Not met	60	Not met	Not met	60	Progress	Met	60	Progress	Met	52	Progress	Met	
Boone Peak	Met	Not met	2052										Met	Met	
Box T	Not met	Not met	1513	Not met	Not met	1774	Progress	Met	736	Progress	Met	311	Progress	Met	
Bridge Creek	Not met*	Met	644										Not met*	Met	
Browns Creek	Progress	Met	522	Progress	Met	793	Progress	Met	125	Progress	Met	125	Progress	Met	
Garrett FFR	Met	Met	31	Met	Met	31	Met	Met	31	Met	Met	31	Met	Met	
Hart Creek	Not met*	Not met	1351	Not met*	Not met	2365	Not met*	Not met	1047	Not met*	Not met	589	Not met*	Not met	
Josephine Creek FFR	Not met*	Not met	20	Not met*	Not met	20	Not met*	Not met	20	Not met*	Not met	34	Not met*	Not met	
Lone Tree	Not met	Not met	942	Not met	Not met	1523	Progress	Met	713	Progress	Met	513	Progress	Met	
Louisa Creek	Not met*	Not met	1798	Not met*	Not met	1868	Not met*	Not met	1028	Not met*	Not met	523	Not met*	Not met	
Meadow Creek FFR	Progress	Met	47	Progress	Met	47	Progress	Met	47	Progress	Met	47	Progress	Met	
Moore FFR	Not met*	Not met	48	Not met*	Not met	48	Not met*	Not met	48	Not met*	Not met	40	Not met*	Not met	
Munro FFR	Met	Met	15	Met	Met	15	Met	Met	15	Met	Met	10	Met	Met	
Quicksilver FFR	Met	Met	12										Met	Met	
Red Hill FFR				Not Met *	Not Met	47	Not Met*	Not Met	47	Not Met*	Not Met	47			
Red Mountain	Not met	Not met	1721										Progress	Met	
Fossil Creek				Not met	Not met	775	Progress	Met	355	Progress	Met	355			
Pickett Creek				Not met*	Not met	3982	Not met*	Met	1467	Not met*	Met	436			

Allotment	Alternative 1			Alternative 2			Alternative 3			Alternative 4			Alternative 5		
	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs	Std 4-5	ORMP Veg. Obj.	AUMs
Stahle FFR	Not Met*	Not Met	35										Not Met*	Not Met	
Steiner FFR	Not met*	Not met	98	Not met*	Not met	98	Not met*	Not met	98	Not met*	Not met	157	Not met*	Not met	
Toy	Not met*	Not met	625	Not met*	Not met	940	Not met*	Not met	264	Not met*	Not met	170	Not met*	Not met	
West Castle	Not met*	Not met	454	Not met*	Not met	700				Not met*	Not met	326	Not met*	Not met	
Whitehorse/ Antelope	Not met	Not met	1807	Not met	Not met	4345	Progress	Met	1520	Progress	Met	1060	Progress	Met	

* Progress toward meeting Standard 4 would not be made with implementation of the alternative due to factors other than current livestock management practices. Those factors include the dominance of juniper within the vegetation community or the lack of residual components of the vegetation community that could recover from appropriate livestock management practices.

3.4.2.1.1.3 Alternative 1

Actions under Alternative 1 would result in the continuation of current livestock management practices and maintain the trend of limited recovery of vegetation resources toward meeting Standard 4 or 5 and the ORMP objectives in the CEAA. Table VEG-67 identifies that allotments comprising approximately 81,815 acres (all ownerships) within the CEAA would continue to not meet the applicable Standard 4 or 5 due to proposed livestock management practices, while an additional 67,122 acres would not meet the standard due to the lack of capability of the current vegetation composition to recover adequately under appropriate livestock management practices to provide proper nutrient cycling, hydrologic cycling, and energy flow. Vegetation communities that would continue to limit recovery include those dominated by juniper and those lacking major deep-rooted bunchgrasses that are a significant component of reference site conditions in all ecological sites present in the CEAA. Also as identified in Table VEG-67, allotments comprising approximately 14,593 acres of public land would be expected to continue to meet or make progress toward meeting the applicable Standard 4 or 5.

Those allotments and the associated acreage within the CEAA meeting or making significant progress toward meeting the applicable Standard 4 or 5 would also have improving vegetation health and condition with progress toward reference site conditions. As a result, Alternative 1 would provide for allotments comprising approximately 7,705 acres of public land to meet the ORMP vegetation management objective. Allotments comprising approximately 127,795 acres of public land within the CEAA would continue to not meet the ORMP management objective to maintain satisfactory and improve unsatisfactory vegetation health and condition.

The intensity of grazing use within the CEAA would remain unchanged at current levels totaling 13,795 AUMs, consistent with the maximum actual use reported by permittees in recent years, as listed in Table VEG-67. With these levels maintained, vegetation health and condition as it relates to reference site conditions would not change.

3.4.2.1.1.4 Alternative 2

Under Alternative 2, progress toward meeting the applicable Standard 4 or 5 would be similar to that progress identified under Alternative 1. Table VEG-67 identifies that allotments comprising approximately 70,010 acres within the CEAA would continue to not meet the applicable Standard 4 or 5 due to proposed livestock management practices, while an additional 97,148 acres would not meet the standard due to the lack of capability of the current vegetation composition to recover adequately under appropriate livestock management practices to provide proper nutrient cycling, hydrologic cycling, and energy flow. Vegetation communities that would continue to limit recovery include those dominated by juniper and those lacking major deep-rooted bunchgrasses that are a significant component of reference site conditions in all ecological sites present in the CEAA. Also as identified in Table VEG-67, allotments comprising approximately 4,960 acres of public land would be expected to meet or make progress toward meeting the applicable Standard 4 or 5.

Those allotments and the associated acreage within the CEAA meeting or making significant progress toward meeting the applicable Standard 4 or 5 would also have improving vegetation health and condition with progress toward reference site conditions. As a result, Alternative 2 would provide for allotments comprising approximately 4,960 acres of public land to meet the ORMP vegetation management objective. Allotments comprising approximately 130,540 acres of public land within the CEAA would not meet the ORMP management objective to maintain satisfactory and improve unsatisfactory vegetation health and condition.

The intensity of grazing use within the CEAA would be greater than current levels and be the product of 19,431 AUMs of authorized active use in all allotments compared to 13,795 AUMs in the current situation, as listed in Table VEG-67. With the intensity of grazing use increased under Alternative 2, vegetation health and condition would be additionally limited, as it relates to reference site conditions.

3.4.2.1.1.5 Alternative 3

Under Alternative 3, with its constraints on the frequency of active growing season and intensities of livestock grazing use, proposed actions would allow progress toward meeting the applicable Standard 4 or 5 in more allotments than under either Alternative 1 or 2 as identified in Table VEG-67. While current livestock grazing management practices would not be a contributing factor to failure to meet or make progress toward meeting the standard, allotments comprising approximately 87,016 acres would not meet the standard due to the ability of the current vegetation composition to recover adequately under appropriate livestock management practices to provide proper nutrient cycling, hydrologic cycling, and energy flow. Vegetation communities that would continue to limit recovery include those dominated by juniper and those lacking major deep-rooted bunchgrasses that are a significant component of reference site conditions in all ecological sites present in the CEAA. Also as identified in Table VEG-67, allotments comprising approximately 61,598 acres of public land would meet or make progress toward meeting the applicable Standard 4 or 5.

Those allotments and the associated acreage within the CEAA meeting or making significant progress toward meeting the applicable Standard 4 or 5 would also have improving vegetation health and condition with progress toward reference site conditions. As a result, Alternative 3 would provide for allotments comprising approximately 84,754 acres of public land to meet the ORMP vegetation management objective. Allotments comprising approximately 84,754 acres of public land within the CEAA would not meet the ORMP management objective to maintain satisfactory and improve unsatisfactory vegetation health and condition.

The intensity of grazing use within the CEAA would be reduced from current levels and be the product of 8,075 AUMs of authorized active use in all allotments under Alternative 3 compared to 13,795 AUMs in the current situation, as listed in Table VEG-67. With the intensity of grazing use reduced under Alternative 3, opportunity for recovery of vegetation health and condition would be enhanced, as it relates to reference site conditions.

3.4.2.1.1.6 Alternative 4

Under Alternative 4, with its greater constraints on the frequency of active growing season and intensities of livestock grazing use than would occur under Alternative 3, proposed actions would allow progress toward meeting the applicable Standard 4 or 5 in more allotments than under either Alternative 1 or 2 as identified in Table VEG-67. While current livestock grazing management practices would not be a contributing factor to failure to meet or make progress toward meeting the standard, allotments comprising approximately 97,148 acres would not meet the standard due to the lack of capability of the current vegetation composition to recover adequately under appropriate livestock management practices to provide proper nutrient cycling, hydrologic cycling, and energy flow. Vegetation communities that would continue to limit recovery include those dominated by juniper and those lacking major deep-rooted bunchgrasses that are a significant component of reference site conditions in all ecological sites present in the CEAA. Also as identified in Table VEG-67, allotments comprising approximately 61,598 acres of public land would meet or make progress toward meeting the applicable Standard 4 or 5.

Those allotments and the associated acreage within the CEAA meeting or making significant progress toward meeting the applicable Standard 4 or 5 would also have improving vegetation health and condition with progress toward reference site conditions. As a result, Alternative 4 would provide for allotments

comprising approximately 84,754 acres of public land to meet the ORMP vegetation management objective. Allotments comprising approximately 50,745 acres of public land within the CEAA would not meet the ORMP management objective to maintain satisfactory and improve unsatisfactory vegetation health and condition.

The intensity of grazing use within the CEAA would be reduced from current levels and be the product of 4,826 AUMs of authorized active use in all allotments under Alternative 4 compared to 13,795 AUMs in the current situation, as listed in Table VEG-67. With the intensity of grazing use reduced under Alternative 4, opportunity for recovery of vegetation health and condition would be enhanced, as it relates to reference site conditions.

3.4.2.1.1.7 Alternative 5

Under Alternative 5, in the absence of authorized livestock grazing, progress toward meeting the applicable Standard 4 or 5 would occur in the allotments of the Toy Mountain Group as identified in Table VEG-67. Because current livestock management practices are not a contributing factor to failure to meet or make progress toward meeting the standard, allotments comprising approximately 67,122 acres would not meet the standard due to the lack of capability of the current vegetation composition to recover adequately to provide proper nutrient cycling, hydrologic cycling, and energy flow. Vegetation communities that would continue to limit recovery include those dominated by juniper and those lacking major deep-rooted bunchgrasses that are a significant component of reference site conditions in all ecological sites present in the CEAA. Also as identified in Table VEG-67, allotments comprising approximately 82,365 acres of public land would meet or make progress toward meeting the applicable Standard 4 or 5 in the absence of authorized livestock grazing.

Those allotments and the associated acreage within the CEAA meeting or making significant progress toward meeting the applicable Standard 4 or 5 would also have improving vegetation health and condition with progress toward reference site conditions. As a result, Alternative 5 would provide for allotments comprising approximately 84,932 acres of public land to meet the ORMP vegetation management objective. Allotments comprising approximately 50,567 acres of public land within the CEAA would not meet the ORMP management objective to maintain satisfactory and improve unsatisfactory vegetation health and condition.

3.4.2.1.2 Soils

3.4.2.1.2.1 Resource-Specific Analysis Area

The cumulative effects analysis area (CEAA) for upland soils and watershed is the extent of the 20 Toy Mountain Group allotments and their associated pastures. This is an appropriate scale for assessing cumulative soil environmental effects because soil productivity is a site-specific attribute of the land and is not dependent on the productivity of an adjacent area. Similarly, if 1 acre of land receives incremental soil impacts – i.e., reduced soil porosity, water holding capacity, aeration, long-term productivity, etc. – and a second management activity is planned for that same site, then cumulative effects to soil are possible. The CEAA was selected because the effects of grazing management on upland soils, as well as hydrologic function and energy flow, only apply within the allotment boundary. With increasing distances from the allotment, it becomes difficult to determine impacts due to the dilution effect that comes with increased acreage.

Through erosional and depositional processes, upland soils provide the sediment that enters riparian areas and is transported within stream systems throughout the watershed and beyond. While the watershed level was initially considered to serve as the CEAA for upland soils, soil and hydrologic function are site-specific. To the extent that soil movement in stream channels affects resources outside of the allotment,

the direct/indirect effects and cumulative effects are considered in detail in the Water Resources Section 3.1.3, 3.2.3, and 3.4.2.1.3.

Past, present, and reasonably foreseeable future activities within the analysis area relevant to cumulative effects were analyzed using approximated BLM GIS data. The Idaho Standards for Rangeland Health (Appendix A), ground cover trend, and the ORMP (USDI BLM, 1999a) were used as a basis for setting thresholds for measurable or observable soil properties or conditions. The threshold values, along with aerial extent limits, serve as an early warning signal of reduced soil and hydrologic function. Significant changes in soil productivity of the land are indicated by changes in soil properties that are expected to result in a reduced productive capacity over the planning horizon. Likewise, declining conditions for rangeland vegetation contribute to deteriorating soil and hydrologic function. Therefore, vegetation serves as the primary indicator of upland watershed health.

Additionally, in Section 3.1.1 and 3.1.2, influences on soils and watershed function from grazing of vegetative cover, season of use, and invasive species are discussed in greater detail. While they do not address every issue, the intent is to provide an overview of commonly observed impacts, trends, and potential consequences associated with range management. These impacts are relevant to all alternatives and provide the background for the comparison of effects.

Analysis timeframes for cumulative effects include past and present activities that have created the present conditions, including historic grazing over the past century, and reasonably foreseeable future activities planned within the next 3 years, including the expected duration of short- and long-term effects from current and future activities. Reasonably foreseeable actions include activities with completed NEPA, scoping, or decisions, and with implementation planned within 3 years. For this evaluation, short-term effects are those that occur approximately within the first 10 years following permit renewal, long-term effects are those that expand 10 years or beyond.

3.4.2.1.2.2 Common to All Grazing Alternatives

The CEAA for upland soils is delineated by the allotment boundaries that lie within portions of the Big Boulder Creek, Castle Creek, Rock Creek, and Swan Falls-Snake River watersheds, and encompasses a total of 175,633 acres (Table SOIL-15). Within the CEAA, 77 percent of the area is public land administered by BLM, 14 percent is private land, and 9 percent is managed by the State of Idaho. Soil conditions throughout the analysis area are as described in Section 3.4.1 and are generally related to elevation, precipitation, and animal use levels.

Table SOIL-15: Toy Mountain Group allotment acre distribution within watersheds

5 th Field HUC	Allotment Use Acres within Watershed	Percent of Watershed Affected
Big Boulder Creek	9,063	11
Castle Creek	112,935	57
Rock Creek	50,949	48
Swan Falls – Snake River	2,686	1
Total	175,633	

Over the past decades, livestock grazing has been the dominant land use activity in the area. Wildfires have caused localized disturbances, while recreation has had limited effects due to its localized and small geographic extent. No wild horse Herd Management Areas are present.

Current and past fire and fire-suppression activities have had an additional influence on the allotments. Consequently, the CEAA has been altered from what would be expected under a natural disturbance regime, mainly as a result of an increase in invasive annuals. The allotments have been primarily grazed

throughout the spring and summer and a variety of range improvement projects, such as spring developments, fences, cattle guards, and troughs have been implemented across the landscape to aid in grazing management.

The movement of upland sediment across the landscape is initiated by erosion and, over time, enters a water source that allows for further transport. Erosion rate, amount, and magnitude are dependent on slope, topography, climatic events, parent material, soil characteristics, vegetation, and potential localized impacts. As previously mentioned, the majority of erosion potential within the CEAA is slight to moderate (Section 3.1.2). The greatest cumulative effects occur where uplands encounter non-functioning degraded riparian areas, especially perennial streams that are not meeting water quality standards (Water Resources Section 3.1.3).

However, grazing management on BLM-administered lands periodically changes in order to meet Standards, which have been in place since 1997, to assess grazing activities and their impacts on resources. These periodic management changes to meet or make significant progress toward meeting standards are put in place to improve overall resource conditions.

Past and Present Activities

The table of past and present actions (Section 3.4 - Table CMLV-1) within the analysis area relevant to cumulative impacts was calculated using BLM GIS data. The data used represent the best available information and the calculations based on the data are approximate. Table SOIL-16 attempts to serve as a quick reference that summarizes soil specific effects to past, present, and reasonably foreseeable future actions for the soil CEAA. The terms for magnitude of upland soil effects are defined as:

- Low – activity affects only a very small percentage of upland soils in the area, or has only a temporary (less than 5 years) effect on soils in a larger area;
- Moderate – activity affects less than a majority of the area, or results in longer-lasting (5 to 10 years) noticeable changes to upland soil and hydrologic function; and
- High – activity affects soil and hydrologic function within the majority of the area, or has extended (more than 10 years) impacts on upland soil and hydrologic function.

Table SOIL-16: Toy Mountain Group allotment CEAA – summary of effects on soils (also see Section 3.4 - Table CMLV-1)

Type of Activity	Timeframe	Degree	Extent	Magnitude of Effect on Soils	Type of Effect
Fences	Most constructed before 1980; few additions each decade	About 390 miles of fence on BLM land	Distributed across analysis area, but cumulatively covering a small percentage of area	Low to Moderate	Short-term, localized construction and maintenance disturbance; chronic cattle trails often compact soils along fences
Range Developments	Most constructed before 1980; some additions each decade	Minimum of 31 reservoirs and 21 troughs; 14 exclosures	Distributed across analysis area, but cumulatively covering a small percentage	Low to High	Short-term, localized construction and maintenance disturbance; chronic cattle congregation trampling soils
Wildfire & Fire Suppression	Ongoing, continuous	Moderately effective given distance to fire facilities, etc.	Across entire analysis area	Low to High	<u>Pros</u> : suppression maintains stabilizing ground cover on soils; <u>Cons</u> : long-term shift from grass/forb/shrub/tree community to localized late

Type of Activity	Timeframe	Degree	Extent	Magnitude of Effect on Soils	Type of Effect
					seral shrub/tree dominated areas with reduced watershed function
Prescribed Fire	Primarily 1982 and early 1990s	About 12,800 acres in selected allotments	Across target acres within the analysis area	Low to High	<u>Pros</u> : reduction of juniper, introduction of fire where fire regime is off; <u>Cons</u> : potential increase in invasive annuals, localized soil burn impacts
Juniper Treatment	2005 and 2007	About 7,688 acres in selected allotments	Across target acres within the analysis area	High within cutting areas; moderately low across entire area	Shift to grass/forb/shrub community increases soil stability, hydrologic function, and improves nutrient flow
Roads	Nearly all in place before 1980	About 416 miles of roads and routes total	Distributed across analysis area, but cumulatively covering a small percentage of area	High but localized; overall moderately low	Physical soil impacts; increased bare soils, decreased soil stability, hydrologic function, and reduced nutrient flow
Trailing	Spring and/or fall	Primarily on existing gravel or native surface roads and trails	Approximately 5,732 acres along about 91 miles	Low to moderate (herding); mod. to high (overnight)	Localized physical impacts (compaction, pugging etc.); limited duration and spatial extent; greater impacts in overnight locations; dust
Recreation	Ongoing, continuous	Low to mod. visitor use; designated OHV/ATV trails; hunting season off-road travel, and dispersed camping	Mostly along existing roads	Low to high in local areas; low across entire area	Localized physical soil impacts
Weed Treatments	Ongoing, continuous	Small areas of chemical treatment	Patchy, mostly along main routes	Low	Increased soil moisture, nutrients, and stability
Utilities/ Powerlines	In place before 1980	Power line poles along 2 miles of transmission and power lines	Far reaching but small scale; isolated	Mod. high in local areas; low across entire area	Localized physical soil impacts; can include a service road
Mining Claims	Most constructed over the past century; ongoing	About 659 acres	Localized; sizes range between 1 to 439 acres	High	Complete removal of topsoil; reduced productivity

Range Developments: Most range developments are in the form of reservoirs, troughs, and fences (Table SOIL-16; Section 3.4 - Table CMLV-1). Impacts to soils are greatest when mechanical equipment is used to create or maintain reservoirs and stock tanks. Troughs are less impacting since generally a smaller area is affected. Removal and construction of exclosures and fences have impacted soil quality in the past depending on time and duration of activities; however, the disturbance is temporary and localized.

In many cases, livestock tend to congregate along fence lines so that the adjacent soils often show increased impacts. Fence lines can also accumulate weeds and add to increased fuel loads, especially in wind-prone areas. The construction of these different range improvements can add an initial short-term negative disturbance to soil quality while localized indirect impacts over small portions of the allotment can continue over the long term.

Vegetation Treatments and Prescribed Fires: Vegetation treatments, such as prescribed fires and juniper and sagebrush control, have had limited effects on the allotment due to their localized and small extent. In 1982 and the early 1990s, 12,800 acres of prescribed fire were used to treat vegetation in the Box T, Josephine FFR, Lone Tree, Louisa Creek, Moore FFR, and Whitehorse/Antelope allotments. General fire effects as described below are possible though burn conditions are usually favorable to protect soil resources.

Available records show that juniper control took place on a total of 7,688 acres in the Hart Creek and Red Mountain allotments in 2005 and 2007. When mechanical equipment is used, it can have localized soil impacts such as compaction, displacement, and rutting; the extent of disturbance depends on inherent soil conditions, soil moisture content, and equipment type.

Wildfires and Fire Suppression: Wildfires have burned and re-burned a total of approximately 23,045 acres in the analysis area between 1950 and 2013 and mainly affected the lower elevation allotments east of the Toy Mountain divide during the 1960s, and then had a stronger presence west of the divide since the 1980s. The most repetitively burned allotments have been Whitehorse/Antelope and Garrett FFR, followed by Box T allotment (Map FIRE-1; Section 3.4 - Table CMLV-1). The most recent fires of 2013 have burned small portions of Whitehorse/Antelope and Red Mountain allotment. Consequent resource damage from mechanized suppression activities and burn severity have caused short-duration disturbances to soils that range from negligible to severe, depending on location, size, and severity of burn (Table SOIL-16).

Lower to mid-elevation wildfires have contributed to the spread of invasive annuals. Mid- and higher elevation fires have removed juniper and often provide for a good mosaic that allows for a diversity of vegetation and different age classes to re-establish, especially if precipitation is favorable. However, the greatest threat can be associated with the establishment of invasive annuals and the consequent reduction in fire intervals that leads to repeated re-burning and loss of soil production and overall watershed health. In general, when wildfires have burned across upland soils, the compounding impacts from temporary loss of infiltration capacity, overland flow, and increased soil erosion, have occurred in localized areas but generally decrease within 1 to 6 years (DeBano, 1981) (Dyrness, 1976) (Huffman, MacDonald, & Stednick, 2001). The change in vegetation, however, can be long-term.

Primary risks from fires are associated with upland water erosion from breaklands, steep slopes, and roads, especially at stream crossings. Wind erosion can transport soil over large distances while burned and disturbed landscapes are particularly susceptible to the spread of annual grasses. Loss of soil productivity can be extended depending on burn severity, location, and post-fire climate characteristics. Following a severe fire, rehabilitation efforts to mitigate the fire's effects on erosion and sediment delivery often occur and reduce potential negative effects. Grazing may also be suspended for a minimum of two growing seasons to allow vegetation to recover and would reduce additional impacts to soils.

Long-term effects to soils from wildfire are favorable where juniper has been removed from sagebrush ecosites and deep-rooted native bunchgrasses have re-established. Past and current fire suppression, however, has influenced fire frequency contributing to an increase in juniper across the landscape. The continual incremental effects of juniper encroachment, primarily affecting the south-easternmost allotments of Toy Mountain Group, contribute to a cumulative increase in upland erosion since juniper suppresses understory vegetation. If juniper encroachment is allowed to progress to the point where understory vegetation is lost, soil erosion and degradation is expected to increase. Subsequently, these areas often have a more difficult post-fire recovery time due to the absence of a seedbank.

Weed Treatments: There are 555 documentations of weed infestations in the analysis area (Table SOIL-16; Section 3.4 - Table CMLV-1). Disturbed soils, for example, around salting areas or water developments, provide an optimal location for weed establishment and subsequent invasion and have the potential to increase localized erosion, deplete soil moisture, and alter nutrient levels. The majority of activities associated with the small areas impacted by weed treatments includes chemical treatment and would have no measurable effect on upland soils and watershed health.

Trailing: Cattle trailing has occurred in the past and is currently taking place on about 91 miles of existing routes (Table SOIL-16; Section 3.4 - Table CMLV-1; not including the added 6 miles analyzed with this EA). All possible segments are reviewed on an annual basis so that changes to routes, AUMs, and livestock type may change in the foreseeable future. The Owyhee Field Office recently finalized the 2012 Trailing EA; the analysis specific to soils is incorporated here by reference (Sections 3.1 and 3.8.3 of the 2012 Trailing EA (USDI BLM, 2012b)).

Effects to upland soils and watershed health from trailing would be minor when cattle are actively herded along established routes, although increased physical soil impacts are possible in overnight locations, especially if soils are wet and vegetation is removed. Cumulative effects of trailing are slight because they disturb a small proportion of the landscape (approximately 3 percent of the CEAA) over very short durations. Consequently, cumulative impacts from trailing are not expected to have lasting adverse effects on watershed and upland soils.

Roads: The construction of roads on public lands has resulted in the removal of soils from the productive land base on approximately 416 miles of gravel, native, and paved roads that traverse the analysis area (Table SOIL-16; Section 3.4 - Table CMLV-1). Depending on location, the amount of traffic that occurs on a given road, road conditions, and movement of soils, allow for sediment transport over various distances at a local or broad-scale level. This adds to localized accelerated erosion across the analysis area but cumulatively covers only a small percentage of the CEAA.

Road Maintenance: Additional soil impacts from proposed road maintenance activities such as grading, drainage improvements, and surfacing on existing dedicated roads will be ongoing and would produce localized soil disturbance associated with the use of heavy equipment. Some roads will receive little to no maintenance, especially if restricted or gated.

Recreation, OHV Use, and Other Activities: The analysis area is open for general motorized use that allows for hunting, fuel wood gathering, collection of miscellaneous products, camping, and motorized touring on established roads. Recreation has had localized resource effects by exposing or compacting soil due to driving, dispersed camping, or by impacting vegetation. Those areas that are frequented by recreationists are disturbed where soils and associated vegetation are permanently or semi-permanently altered from heavy use (Table SOIL-16). Off-highway vehicle (OHV) use does occur in some areas, especially east of the Toy Mountain divide where several all-terrain vehicles (ATV) and motorcycle trailheads, such as Fossil Butte, provide access. This will continue to have localized impacts on upland soils, especially when it involves unauthorized cross-country trails. Cumulatively, they are of little issue in the Toy Mountain Group CEAA.

Utilities/Power lines: There are power pole structures along 2 miles of transmission and power lines within the Hart Creek and West Castle allotments (Table SOIL-16; Section 3.4 - Table CMLV-1). Transmission structures and power line construction have high-intensity but short-term effects on vegetation and soils. Vegetation is set back to an earlier, native seral stage for a few years, and soils are moved and/or compacted; however, these areas usually grow back and become stable with a mature native plant community, except where a service road is present.

Mining Claims: There are approximately 659 acres impacted by mining activities within the CEAA (Table SOIL-16; Section 3.4 - Table CMLV-1) associated with the extraction of precious metals and bentonite. The size of each claim or operation ranges from 1 to 439 acres and has resulted in variable disturbances from physical surface impacts to complete removal of topsoil.

Reasonably Foreseeable Activities

Reasonably foreseeable activities on upland soils, aside from livestock grazing, are expected to increase with the ongoing threat of wildfires along with vehicular use and recreation from a growing population in the nearby Treasure Valley. Unauthorized OHV routes that illegally expand beyond existing roads and trails contribute to loss of vegetation, accelerated soil erosion, and establishment and spread of invasive and noxious weeds in the analysis area. Although travel management planning and enforcement has reduced this expansion, effects to soils and vegetation continue along the Owyhee Front, which has received the greatest cumulative disturbance from recreational use.

A transportation plan for Owyhee County is expected in the near future and may alleviate some concerns associated with OHV use because routes would be designated, reducing cross country and unauthorized travel. However, products resulting from travel management, such as maps and signage, are likely to result in greater visitor use, which may increase pressure on upland soils and watershed resources.

No State land exchange or juniper treatments are anticipated. Grazing permit renewals are expected to maintain or improve vegetation conditions within the analysis area; no additional fences or range developments are associated with these renewals but could be addressed over the upcoming years. It is likely that mining activity would continue into the foreseeable future, so that long-term impacts on soil productivity and potential mobilization of sediment sources remain.

In combination, the primary past, present, and reasonably foreseeable future actions that have led toward improving watershed health and conditions include wildfire consistent with the natural fire return interval (controlling juniper), vegetation treatments for juniper, and ongoing control of noxious weeds. Actions that have led toward declining watershed health and conditions include the indirect effects of concentrated livestock activity adjacent to rangeland developments (water development, fences), wildfire at intervals inconsistent with natural return intervals, ongoing disturbance from roads/trails, and mining claims.

As a result of these limited upcoming activities, along with past and present activities described above, upland soil resources are expected to remain much as they currently are. Soils would contain mosaics of variable functionality influenced by inherent characteristics, external impacts, and depend greatly on the status of the available plant community. While localized impacts are possible, no indication of substantial change to upland soils and watersheds is anticipated within the cumulative effects analysis area from reasonably foreseeable activities.

Alternative Comparison

Grazing activities analyzed in this EA would contribute toward cumulative effects on upland soils and watersheds by incrementally influencing soil stability and hydrologic function in the Toy Mountain Group allotments, as described in direct and indirect effects (Section 3.2.2). The extent of the allotments' incremental additions to effects from other activities (described above) is displayed in Table SOIL-17 and is discussed below. Also included is a comparison of results for the status of meeting Standard 1 and OPRM soil objectives.

Table SOIL-17: Comparison of alternatives for AUMs and the status of meeting Standard 1 and ORMP objectives

		Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Current Active AUMs (Baseline) 13,795 AUMs		No change	+5,636 AUMs; 41% increase	-5,720 AUMs; 41% reduction	-8,969 AUMs; 65% reduction	-13,795 AUMs; 100% reduction
Status of Allotments Meeting Standard 1 and ORMP Soil Objectives	Not meeting – due to livestock	5	6	1	0	0
	Not meeting – not due to livestock	6	5	3	4	5
	Making Progress	1	1	7	8	7
	Meeting	8	6	6	6	8
	Total Allotment Number*	20	18	17	18	20

*total allotment number differs by alternative due to the creation and merger of new allotments in Alternatives 2, 3, and 4; and no Alternative 3 development for the West Castle allotment

The developed alternatives are expected to maintain or improve upland soil resources with a few exceptions that would not make significant progress toward meeting standards (see Table SOIL-17). Therefore, the additive effects from most alternatives to cumulative effects are expected to be minor. The number of permitted active AUMs is used as an indicator of the extent of effects. Note that the indicators for baseline condition are active AUMs for the allotments within the cumulative effects analysis area.

While livestock number would be a good measure to compare potential physical impacts, it is meaningless without including a time frame, which is provided by using AUMs. Allotments or pastures identified to not meet or be at risk because of juniper encroachment (Section 3.1.2 – Tables SOIL-1, 3, and 5) have the potential to show ongoing declines in soil and hydrologic function or could move from meeting to not meeting in the future.

3.4.2.1.2.3 Alternatives 1 & 2

Alternatives 1 and 2 would have direct and indirect effects to upland watershed soil and hydrologic function as described in Sections 3.1.2, Section 3.2.2., and Section 3.3. When added to the past, present, and reasonably foreseeable future actions that will affect vegetation and associated upland watershed health, Alternative 1 would continue current conditions. Where Standard 1 and ORMP objectives are not meeting (see Table SOIL-5 and 7), Alternative 1 would cumulatively have small incremental negative effects on upland soils and their associated processes.

Past and present livestock grazing has affected soils in the CEAA by reducing and altering vegetative cover with the utilization of key forage species during critical growth periods and by increasing physical soil disturbance. The reduction in vegetative cover and the increase in compaction result in reduced infiltration of water and exposed soils, making them susceptible to accelerated wind and water erosion. These impacts are most prevalent in easily accessible terrain or livestock congregation areas.

Other activities that continue to occur within the CEAA include range improvements, wildfires, weed and vegetation treatments, trailing, roads, recreation, and mining (Table SOIL-16). Since the grazing proposed under the alternatives would contribute to a decrease in soil stability and hydrologic function, it would add to the overall impacts within the CEAA.

While the cumulative effects would be small, the negative effects of the grazing scheme would contribute to a cumulative increase in soil and hydrologic impacts and promote upland erosion. The continued poor conditions within the allotments would add to overlapping impacts from activities within the CEAA and contribute to the decline in upland watershed health.

3.4.2.1.2.4 Alternatives 3, 4 & 5

Alternatives 3, 4, and 5 would have direct and indirect effects to upland watershed soil and hydrologic function as described in Section 3.2 and 3.3. Specifically, the alternatives would improve plant communities at increasing magnitudes and result in improved soil and hydrologic function that reduce erosion potential at the corresponding levels. When added to cumulative actions that will affect vegetation and associated upland watershed health, Alternatives 3, 4, and 5 would cumulatively have small incremental improving effects on upland soils and their associated processes.

3.4.2.1.2.4.1 Alternative 3

Alternative 3 incorporates deferment of grazing during the critical growing season and would have beneficial effects on soils, even in the absence of decreased stocking rates, because recovery of plant species composition and biodiversity of key forage species would be enabled. The resulting increased soil surface protection and decrease in sediments would improve upland soil and watershed health. Considering the past, present, and reasonably foreseeable future actions influencing soils in the CEAA, the impacts from Alternative 3 would have a positive cumulative effect by reducing soil impacts and by decreasing sediment movement that would otherwise be destined to reach riparian areas and streams.

3.4.2.1.2.4.2 Alternative 4

Alternative 4 is expected to have similar positive cumulative effects as Alternative 3; however, because restrictions to grazing during the critical growth season and wet spring months would further benefit upland soils by providing extended rest and deferment as well as result in reduced active AUMs for some allotments, Alternative 4 would provide additional protection compared to the implementation of Alternative 3.

3.4.2.1.2.4.3 Alternative 5

Alternative 5 would provide extended rest from livestock grazing over the life of the permit. The improvements would be similar to Alternatives 3 and 4, though the incremental effects associated with the recovery of soil stability, hydrologic function, and nutrient cycling affecting upland soils and watershed health would be faster. Despite a potential increased risk of wildfire where monocultures of invasive annuals dominate, Alternative 5 would cumulatively offer the greatest benefits to the CEAA.

All three alternatives would maintain and benefit upland soils to varying degrees and result in the increased capture, storage, and safe release of precipitation, as well as improve energy flow and nutrient cycling in the analysis area. When these effects are considered in conjunction with the past, present, and reasonably foreseeable future actions that also affect soils in the CEAA, Alternatives 3, 4, and 5 would have positive cumulative effects on upland soils and watershed function.

3.4.2.1.3 Riparian/Water Quality

3.4.2.1.3.1 Resource-Specific Analysis Area

The water and riparian resource CEAA was set to the four IDEQ 5th field HUCs (watersheds) (Table RIPN-31, Map CMLV 1) that incorporate and extend beyond the Toy Mountain Group 3 allotments boundary. The watersheds comprise assessment units that were established to incorporate groups of

similar streams with the same stream order, and with similar land use practices, ownership, or land management.

The watersheds that make up the CEAA include Big Boulder Creek, Castle Creek, Rock Creek, and Swan Falls-Snake River. The BLM chose this CEAA because the direct and indirect effects of grazing management on riparian and watershed resources, as well as on specific impacts such as stream sediment and water temperature, would be experienced within these IDEQ 5th field HUCs. Outside of this area, however, direct and indirect effects of the grazing scheme would not be experienced and/or would be too small to create identifiable cumulative effects.

Analysis timeframes include past activities that have created the present conditions, and future activities planned within the next 3 years, including the expected duration of effects from current and future activities (generally up to 10 years).

Table RIPN-31: IDEQ 5th field hydrologic unit codes (watersheds) and acres for the Toy Mountain Group 3 allotments

5 th Field HUC (watershed)	Watershed Acres
Big Boulder Creek	85,579
Castle Creek	198,029
Rock Creek	106,101
Swan Falls-Snake River	207,032
Total Acres	596,741

3.4.2.1.3.2 Common to All Grazing Alternatives

Livestock: Livestock grazing is the dominant land use activity in the area, and almost all of the land area is managed for grazing (Table CMLV-2). There are 31 grazing allotments that are contained fully or partially within the CEAA and 20 allotments are analyzed in the direct and indirect effects for the riparian resource. In the 1990s, BLM initiated a series of range reform activities in response to poor range conditions. Since the Standards were implemented in 1997, Idaho BLM has reviewed and issued grazing permits on approximately half of the available allotments in the general area. The final decisions for these allotments have been implemented to make significant progress toward meeting Standards. Currently, the allotments in the area are primarily grazed throughout the spring and summer. The allotments in the analysis area are in various stages of the 10-year permit cycle, and as expiration dates approach, each allotment will be evaluated for rangeland health and progress toward meeting Standards prior to the authorization of a new permit. Overall, past and current grazing in the CEAA has had an adverse effect on riparian and watershed resources (Table ALLOT-2) because grazing has primarily occurred during the spring and summer months when the riparian area soil and vegetation are most vulnerable. Reasonably foreseeable future grazing is expected to improve the condition of the riparian areas and watersheds at a minimum to make significant progress toward meeting the Idaho Rangeland Health Standards.

Range Improvements: Additionally, a variety of range improvement projects such as spring developments, fences, cattle guards, and troughs have been implemented across the landscape to aid in livestock grazing management. Idaho's current range improvement database identifies 181 reservoirs and troughs within the allotments. Although the current permitting process is not considering range improvements, it is anticipated that they will continue to be part of the landscape into the future, and that some lesser number will be added and/or modified to meet the needs of the livestock grazing industry.

The development of reservoirs and troughs across the landscape has impacted the natural state of the springs, often reducing the other values they provide (i.e., ground water infiltration and wildlife habitat).

Trailing: Multiple livestock trailing routes currently traverse the Toy Mountain Group 3 allotments as well as the CEAA (Tables CMLV-1 and -2, and Maps CMLV-1 and RNGE-2). There are 134 miles of trails documented in the CEAA and 91 within the allotments. Livestock would typically be allowed to trail on existing roadways for 1 day during the spring and a second day during the fall. It was assumed that the routes would continue to be authorized into the future. Trailing would occur regardless of the scheduled use within a pasture (i.e., use would occur when pastures are otherwise rested). However, this amount of use would not have discernible effects on the riparian and water resources because the cattle are required to trail on existing roadways and would not congregate in the streams and/or springs.

Wildfires: Wildfire records maintained by the Idaho BLM State Office indicate that 74,910 acres have burned from 1960 through 2013 within the analysis area (Table CMLV-1 and -2, and Map FIRE-1). Wildfires have caused disturbances within the watersheds, increasing the potential for overland flows, soil erosion, and increased stream sedimentation. When wildfires have burned and removed riparian vegetation, the compounding impacts such as increased stream temperatures, loss of water infiltration, decreased bank stability, and impaired aquatic species habitat have occurred within the CEAA.

Recreation & OHV Use: Increasing population in the Treasure Valley and an increasing popularity of off-highway vehicles (OHVs) are creating additional pressures on the water-riparian resources from recreation uses. The recent Wilderness and Wild and Scenic River designation is also expected to increase recreation use of this general area. There are approximately 1,823 miles of unpaved roads traversing the analysis area (Table CMLV-2, and Map CMLV-1). Depending on the amount of traffic that occurs on a given road, the stream crossings increase erosion and sedimentation, and disturb vegetation and aquatic species both on a site specific scale as well as downstream of the crossings.

A transportation plan for Owyhee County is expected in the near future, which may alleviate OHV resource concerns because routes would be designated, reducing cross country and unauthorized travel. However, products resulting from travel management such as maps and signage are likely to result in increased visitor use, which may increase pressure on the water/ riparian resources.

Mining Claims and Gravel Pits: The CEAA area contains both historic as well as active mining. There are about 990 acres of mining claims recorded within the CEAA, and 659 within the allotments. It is unlikely that new mining activity would begin in the foreseeable future. However, the past and current activity has impacted the riparian condition and the water quality within the CEAA. The streams adjacent as well as those downstream would be influenced by the mining activity. The IDEQ assessment for the Jordan Sub-basin (Tables RIPN-1 and -3), which encompasses the southern watershed and allotments, lists mining as one of the major land uses within the area.

Existing Conditions and Baseline

The water-riparian resource cumulative impact analysis area is 596,741 acres, consists of four watersheds (5th field HUCs), and contains approximately 352 miles of perennial streams, 1,105 miles of intermittent streams, and 169 springs (NHD). As discussed in the affected environment Section 3.1.3, many of the streams designated as intermittent are actually ephemeral and are covered in the watershed/soils Sections. Within the Toy Mountain Group 3 allotments, there are approximately 296 miles of stream that are not supporting the watershed's beneficial uses (238 miles on BLM), 10 miles that are fully supporting (4 miles on BLM), and 140 miles of stream that have not been assessed by IDEQ for beneficial uses (85 miles on BLM). Beneficial uses are assigned by the IDEQ on a sub-basin scale and within the CEAA they include: cold-water aquatic life, salmonid spawning, drinking water supply, special resource water, and primary and secondary contact recreation. Additionally, of the streams that are not supporting the

beneficial uses, 133 miles have been placed on the 303(d) list by the State and are water quality-impaired (Table RIPN-3, Maps RIPN-1A and RIPN-1B; (Idaho DEQ, 2013)).

Sixteen of the twenty Toy Mountain Group 3 allotments contain measurable streams (NHD). These allotments contain approximately 103 miles of stream that have been assessed that occur on BLM lands; currently, approximately 81 miles (78 percent) of these are not meeting Standards 2 and 3 (are not in PFC) (Table RIPN-31). The Idaho Rangeland Health Standards 2 and 3, as well as the ORMP objective for riparian-wetland areas, state that the riparian-wetland areas are to be maintained or improved to attain proper functioning condition. Proper functioning condition is a minimal standard and since all streams, springs, seeps, and wetlands should attain PFC, the baseline for the cumulative effects analysis was set to a PFC rating. Although there is natural variability for the riparian systems, streams in PFC would have the resiliency to withstand high water flows because deep-rooted vegetation would be present to stabilize streambanks and shorelines and the morphological indicators (width/depth ratio, gradient, and sinuosity) would be appropriate for the valley bottom type, hydrology and soils. Additionally, the presence of hydric vegetation would control erosion, shade water to reduce stream temperature, filter sediment, aid in floodplain development, delay flood water, and increase recharge of groundwater.

Table RIPN-31: Toy Mountain Group 3 miles of stream accomplishing and not accomplishing the cumulative effects baseline

Allotment	Perennial & Intermittent Streams on BLM lands (NHD miles)	Perennial & Intermittent Streams Assessed (miles)	Condition Rating	% of Total that has been Assessed
Alder Creek	0.8	0.5	PFC	100
Boone Peak	16.0	3.9	PFC	100
Box T	14.6	4.4	FAR	94
		0.3	PFC	6
Bridge Creek	6.4	2.5	FAR	74
		0.9	PFC	26
Brown's Creek	19.9	3.1	FAR	56
		2.4	NA	44
Garrett FFR	3.2	1.8	NA	100
Hart Creek	84.2	2.5	PFC	18
		11.1	FAR	82
Josephine FFR	NA			
Lone Tree	18.6	2.7	PFC	33
		5.6	FAR	67
Louisa Creek	27.5	2.4	PFC	48
		3.2	FAR	52
Meadow Creek FFR	NA			
Moore FFR	2.0	0.25	FAR	100
Munro FFR	NA			
Quicksilver FFR	0.6	0.2	FAR	100
Red Mountain	39.9	6.7	PFC	58
		4.8	FAR	42
Stahle FFR	NA			
Steiner FFR	8.1	0.3	PFC	10
		0.4	FAR	12
		2.5	NA	78
Toy	10.9	2.5	PFC	51
		2.1	FAR	43
		0.3	NA	6

Allotment	Perennial & Intermittent Streams on BLM lands (NHD miles)	Perennial & Intermittent Streams Assessed (miles)	Condition Rating	% of Total that has been Assessed
West Castle	28.7	1.2	PFC	60
		0.8	FAR	40
Whitehorse/Antelope	140.4	16.0	PFC	67
		7.5	FAR	31
		0.5	NA	2

Cumulative Effects Common to all Grazing Alternatives

Table RIPN-32 shows the network of overlapping effects from the proposed action, alternatives, and the past, present, and foreseeable activities. Only the activities where effects overlap in time and space with effects from other activities and those impacts are displayed.

Table RIPN-32: Past, present, and foreseeable activities and the overlapping effects

Other Activities	Impacts
Livestock Grazing	<ul style="list-style-type: none"> • Increased erosion • Soil Compaction • Sediment loading of riparian areas and streams • Decreased vegetation • Manure deposition in and near streams • In-stream trampling and congregation • Decreased stream bank stability • Change in channel shape, structure, and form • Reduced water infiltration • increased flooding • reduced groundwater recharge • lowered water table • increase stream bank erosion • removal of submerged vegetation • increased runoff • increased water velocity • less shade and higher stream temperatures • less sediment trapping • decreased water infiltration • reduced aquatic habitat • reduced fish spawning habitat • loss of wildlife habitat
Range Improvements	<ul style="list-style-type: none"> • trampling and congregation • decreased vegetation • increased erosion • decreased stream bank stability • loss of form and function
Fires	<ul style="list-style-type: none"> • Decreased vegetation • Increased erosion • Decreased stream bank stability • Change in channel shape, structure, and form • increased erosion • increased runoff • less shade and higher stream temperatures

Other Activities	Impacts
	<ul style="list-style-type: none"> • less sediment trapping • reduced aquatic habitat • reduced fish spawning habitat • loss of wildlife habitat
Roads/ OHV use	<ul style="list-style-type: none"> • increased erosion • decreased stream bank stability • higher sediment & stream temperatures • reduced aquatic habitat
Mining	<ul style="list-style-type: none"> • increased erosion • flow alteration • increased nutrients: metals, pH, mercury • increased temperature

3.4.2.1.3.3 Alternatives 1 and 2

The following effects analyses would not apply the Josephine FFR, Meadow Creek, and Stahle FFR allotments because there are no measurable riparian-wetland resources present. Additionally, they would not apply to the Moore, Munro FFR, and Steiner FFR allotments because they are currently meeting the riparian and water quality Standards 2, 3, and 7; and they would not apply to the Boone Peak, Garrett FFR, and Red Mountain allotments because they are making progress toward meeting the Standards. The analyses would apply to the remaining 11 Toy Mountain Group allotments.

As described above in the direct and indirect effects Sections 3.2.3.2 and 3.2.3.3, the general theme of the alternatives would be to authorize livestock use during the spring, summer, and fall. Specifically, approximately 50 miles of perennial streams, 371 miles of intermittent/ephemeral streams, and 48 springs would be affected by the impacts associated with those seasons of use. The alternatives would continue to degrade the riparian areas because the removal of riparian vegetation, deposition of fecal matter, and livestock trampling would continue. Furthermore, the associated secondary impacts, including sedimentation, increased water temperatures, lowered water table, and decreased suitability of aquatic species habitat, would also remain the same.

All of the streams within the analysis area have been affected by past and present livestock grazing because the allotments within the CEAA have been and continue to be grazed during the vulnerable riparian area growing season, and livestock congregate in riparian areas during the hot season. Under Alternatives 1 and 2, the streams in the Toy Mountain Group 3 allotments would continue to be impacted by grazing during the riparian area's vulnerable time, and the continued impacts, when combined with those occurring on the other allotments within the analysis area, would continue to alter stream banks because deep-rooted riparian vegetation would be removed and channels would be trampled.

Present and future proposed changes in grazing management within the CEAA to make progress toward meeting Rangeland Health Standards could improve wetlands and riparian areas by increasing woody and herbaceous plant communities. As plant communities change, stream banks would stabilize due to increases in deep-rooted riparian vegetation that bind the stream banks. Fine sediments would decrease and stream shade would increase due to the development of riparian communities. Eventually the channels would narrow and deepen and aquatic habitat conditions would improve as channel form recovers. The continued degradation from the action expected within the allotment would be added to the expected improvements occurring in the adjacent allotments. However, overall, the small improvements expected in the adjacent allotments would not be enough to offset the continued poor condition of the

riparian and watershed conditions within the allotment under these alternatives, and the conditions within the CEAA would continue to be degraded.

Past and present range projects such as spring developments, fences, cattle guards, and troughs occur across the landscape to aid in livestock grazing management. The development of reservoirs and troughs across the landscape has impacted the natural state of the springs, often reducing the other values they provide (i.e., ground water infiltration and wildlife habitat). BLM has authorized spring developments, fencing, and the placement of watering troughs in an attempt to re-distribute livestock away from the spring sources. However, currently, many of the developments are not maintained and are in disrepair. The spring source may be excluded, but often the area fenced is too small to protect the riparian area fully and the majority of the water is piped to troughs away from the source, causing a loss of functionality and values. Additionally, livestock concentrate around the troughs causing compaction of soils, altered flow patterns, and loss of vegetation.

A general impact associated with both roads crossing streams and the loss of vegetation caused by wildfires is an increase in sediment and stream temperatures and thus less-suitable aquatic species habitat. The sediment increase from roads occurs where the roads cross the streams, after which the effect is apparent downstream of the crossings. The sediment increase caused by fires occurs because erosion increases when overland flows increase due to the loss of vegetation. Past fires have overlapped with riparian areas and have impacted about 19 percent of the CEAA and the streams and springs that occur within that area. Since the grazing proposed under the alternatives would contribute to an increase in sediment and stream temperatures, it would add to the sediment increase caused by stream crossings and loss of vegetation due to fires and would increase the overall impact within the CEAA. The cumulative impact would be small, but when added to the impact from the other activities, the condition of the riparian areas and watersheds would continue to be degraded.

Mining claims and surface gravel pits occupy approximately 990 acres of the CEAA. Active mining impacts the water quality of streams through the introduction of heavy metals and pollutants. Stream temperatures and sediment levels increase reducing the aquatic species habitat quality. Since these impacts overlap with some of those caused by livestock use, the overall impact within the CEAA would add to the poor condition of the streams.

Overall, implementation of either of the alternatives would continue degradation of the riparian-wetland areas within the allotments, and 80 miles (about 78 percent) of the streams that have been assessed would continue to fail to meet the Standards associated with the riparian-wetland areas. The continued poor conditions within the allotments would add to overlapping impacts from activities within the larger CEAA and contribute to the streams and springs not attaining the PFC baseline.

3.4.2.1.3.4 Alternatives 3 and 4

The direct and indirect effects from Alternatives 3 and 4 (described in Sections 3.2.3.4 and 3.2.3.5) would allow sufficient herbaceous and woody vegetation to remain after the growing season to protect the stream banks during high flow events, allow vegetation to regenerate, and protect riparian soils from physical alterations. When the direct and indirect effects of the alternatives are added to the other past, present, and reasonably foreseeable future actions described above, the condition of the streams, springs, and associated riparian-wetland areas within the analysis area watersheds would see an overall small improvement. The improvements in the condition of the streams and springs would lead to increased riparian area function (i.e., increased water infiltration and improved aquatic and fish habitat).

Past and current livestock grazing within the CEAA generally occurs during the spring and summer months, degrading the riparian areas because streams are trampled and herbaceous and woody riparian vegetation are removed during the vulnerable riparian-area growing season. Although there would be an

incremental improvement from the implementation of either of these alternatives, it would be small overall when related to the livestock grazing within the CEAA because the past and current practices in the adjacent allotments are degrading the riparian habitat. However, since future proposed changes in grazing management to make progress toward meeting Rangeland Health Standards is expected to occur, there would be an improvement in the condition of the wetlands and riparian areas because an increase in the riparian woody and herbaceous communities would occur. As the plant communities change, stream banks would stabilize due to increases in deep-rooted riparian vegetation that bind the stream banks. Fine sediments would decrease and stream shade would increase due to the development of riparian communities. Eventually the channels would narrow and deepen and aquatic habitat conditions would improve as channel form recovers. Overall, the improvements expected within the allotment as well as within the adjacent allotments would lead to an overall improvement in the condition of the riparian areas and watersheds within the CEAA.

Other activities that have and continue to occur within the CEAA and have impacts that affect the riparian areas and that overlap with those caused by livestock grazing include wildfires, roadways that cross streams, off-road OHV use, and range projects (Table RIPN-32).

The improvement resulting from the implementation of either of the alternatives would help offset the impacts from the other activities occurring within the CEAA, and the condition of the streams and springs that occur within the analysis area would make progress toward an improvement in condition and attaining the cumulative effects baseline.

3.4.2.1.3.5 Alternative 5

Under Alternative 5 (for details, see Section 3.2.3.5), the elimination of grazing for a period of 10 years would restore the riparian ecosystem because the rest from livestock grazing would allow for the recovery of the stream bank and a functional riparian plant community. Information is lacking on the length of rest required for recovery of riparian vegetation; however, shrubs often require longer periods of recovery than herbaceous vegetation (Powell, Cameron, & Newman, 2000). Improvement in stream channel form and function would only occur if the channel is at a stage where improvement is possible; for example, downcut systems would need to reach a new base level and widening would have to occur to allow vegetation establishment sufficient to resist higher flows (Leonard & Karl, 1995). Recovery would also be dependent on the levels of degradation and the climatic variables (Bellows, 2003). Since the allotments occur in an arid region and most of the riparian areas are degraded, 10 years of rest would not generate riparian-wetland areas that historically existed. However, research has found that in ungrazed areas, streams experienced decreased widths and depths (Clary, 1999), vegetation cover increased two-fold, stream bank stability increased by 50 percent (Scrimgeour & Kendall, 2002), and stream bank erosion was 3.3 times less in an ungrazed area compared to an area grazed at a moderate stocking rate and level of use (Kauffman, 1982).

The implementation of this alternative would have the greatest benefit for the riparian and water resources within the allotments and the CEAA because the riparian ecosystem would recover most of the structural and functional diversity that should occur within the allotments. Thus, the allotments would make progress toward meeting the water and riparian Standards 2, 3, and 7. Additionally, the ORMP objective to maintain or improve riparian-wetland areas to attain PFC for all lotic and lentic systems would be achievable the most quickly. Similarly, progress would be made toward meeting the ORMP objective to meet or exceed State water quality standards.

3.4.2.1.4 Special Status Plants

3.4.2.1.4.1 Resource-Specific Analysis Area

The Cumulative Effects Analysis Area (CEAA) for special status plants encompasses the collective outside boundary of all watersheds in which the Toy Mountain Group allotments occur: Big Boulder Creek, Castle Creek, Rock Creek, and Swan Falls-Snake River (Map CMLV-1). This area is appropriate because the same types of disturbances and ecological processes function at this landscape scale on special status plant occurrences. Extending the CEAA beyond this boundary would dilute the impacts of the proposed action within the project area. The timeframe considers past actions that have influenced current conditions, activities planned within the next 3 years, and the expected life of this permit (10 years). The life of the permit was chosen because the effects of the proposed action and alternatives would change in 10 years, as it is assumed the permit would be reevaluated at that point.

Table SSPS-2: Past and Ongoing Activities and potential effects on Special Status Plants (SSP) in the CEAA

Activity	Magnitude of Effect on SSP	Type of Effect
Historic Livestock Grazing	Moderate, widespread	Direct Effect - herbivory and trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect- change in vegetation composition, non-native weed invasion, altered fire regime, habitat fragmentation; potentially decreasing suitable habitat, unknown effects on populations
Herd Management Area	Moderate in localized pasture within HMA	Direct Effect - trampling plants; potentially reducing vigor and reproduction of individuals Indirect Effect- change in vegetation composition, non-native weed invasion, altered fire regime, habitat fragmentation; potentially decreasing suitable habitat, unknown effects on populations
Infrastructure (fences, reservoirs, troughs, structures, etc.)	Potentially high in a small percentage of occupied habitat	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of habitat
Roads	Potentially high in a small percentage of occupied habitat	Localized elimination of individual plants and perhaps small occurrences; permanent degradation of habitat
OHV	Moderate to high, localized to a small percentage of occupied habitat	Localized seedbank loss, elimination of individual plants and perhaps small occurrences; severe habitat degradation
Trailing	Likely minor to low in a small percentage of occupied habitat	Localized physical impact and elimination of individual plants and perhaps small occurrences
Noxious Weed Treatment	Likely low if at all in a small percentage of occupied habitat	Overspray potentially reducing vigor and reproduction of individuals and mortality of individuals; unknown effects on populations

Activity	Magnitude of Effect on SSP	Type of Effect
Wildfire & Fire Suppression	Minor to moderate, widespread	Low elevation: Long-term (>10 years) shift to reduced species diversity, non-native weed invasion, and altered fire regime. High Elevation: Long-term (>10 years) shift from grass/forb/shrub community to localized late seral shrub dominated areas with reduced species diversity and stress to special status plant occurrences
Prescribed Burning	Likely low if at all in a small percentage of occupied habitat	Short-term (<10 years) minor negative impact to habitat and change in competition; long-term (>10 years) shift from late seral shrub dominated community to grass/forb/shrub community with greater diversity and stability to special status plant occurrences
Mining Claims	Potentially high in a small percentage of occupied habitat	Localized physical impact and elimination of individual plants and perhaps small occurrences; permanent degradation of habitat

Historic Livestock Grazing: This is the dominant land use activity in the area, with almost all of the acreage being managed for grazing. Historically, season-long grazing was common, which, in some areas, has precipitated a shift from a mid- to late seral perennial-dominated system to an early successional, non-native weed-dominated system increasing the amount of fine fuels and subsequently changing the fire regime. Currently, allotments in the CEAA are primarily grazed in the spring and summer months when vegetation (native and special status plants) and habitat are most vulnerable due to the critical growing season and saturated soils. Rested and deferred-use pastures have increased in more recent management with the initiation of range reform in the 1990s and the implementation of the Idaho Standards for Rangeland Health in 1997. Livestock grazing has varying degrees of adverse effect on special status plants (Section 3.7.2) and their habitats. However, grazing permit renewals typically implement grazing systems that minimize impacts to special status plants by adjusting the timing and intensity of livestock use in occupied habitat thereby reducing cumulative effects from these activities.

3.4.2.1.4.2 Common to All Grazing Alternatives

Infrastructure (fences, reservoirs, troughs, structures): A variety of infrastructure projects have been implemented across the landscape to aid in livestock grazing management. While no infrastructure projects are being considered within the purpose and need of this EA, it is anticipated that they would continue to be part of the landscape and that some lesser number would be added and/or modified to meet the needs of the livestock grazing industry in the future. Infrastructure throughout the landscape has created congregation areas with potentially localized impacts and elimination of plants possibly small occurrences. Further impacts from infrastructure are not likely as avoidance measures are adhered to in occupied habitats where new infrastructures and maintenance of existing infrastructures would occur.

Trailing: Cattle and sheep trailing routes currently traverse the CEAA and the project area (Section 3.2 - Table CMLV-2; Map RNGE-2). Trailing would typically occur on existing roadways for one day during the spring and a second day during the fall. While trailing permits are renewed on an annual basis, it is

assumed the activity would continue to be authorized into the future. Trailing impacts on special status plants would be minor, if at all, given the mandatory term and condition of a narrowed width buffer (240 feet) along trailing routes within pastures containing special status plants (Section 3.7.2 Environmental Consequences and the 2012 Trailing EA (USDI BLM, 2012b)) and the limited frequency and duration. The Owyhee Field Office recently finalized the OFO Livestock Trailing EA; the analysis specific to special status plants is incorporated here by reference (2012 Trailing EA (USDI BLM, 2012b)). The majority of trailing would occur along approximately 140 miles of established paved, gravel, or native surface roads and their associated borrow ditches with additional remaining miles occurring on cross-country or unknown surface trailing routes. Animals may spread out up to one-eighth of a mile on each side of the routes (total ¼-mile width), potentially impacting streams and springs they cross once or several times over each route within a year.

Roads: There are approximately 1,823 miles of gravel, native, and paved roads within the CEAA. It is anticipated that future roads would be constructed in association with range improvement and renewable energy projects, but direct impacts to special status plants are not likely to occur as avoidance measures would be included in the design features. However, where disturbance occurs from new roads at lower elevation there is potential for weed patches rather than native early seral species. Potential indirect impacts are non-native weed invasion in the short term (less than 10 years) and an altered fire regime and habitat fragmentation in the long term (more than 10 years).

OHV: The majority of the CEAA is open for general motorized use allowing for travel on established roads. However, unauthorized use does occur and has had negative localized resource effects where special status plant habitats are permanently or semi-permanently altered from repeated heavy use. With the increased popularity of OHV use and expanding population in the Treasure Valley, impacts to the resource are expected to increase. While the resource in the southern part of the CEAA is subject to OHV use, the greatest pressure is in the northernmost allotments around the Owyhee Front, which share proximity to the lower Treasure Valley.

According to the ORMP (USDI BLM, 1999a), OHV use is expected to increase 70 percent from 1999 to 2029 (RMP III-24); areas of low elevation, such as lakebed sediments along the Owyhee Front, are expected to be the highest use areas. This is a common theme for the CEAA within Oregon. In the near future, both Owyhee County, Idaho, and Malheur Resource Area in Oregon are expected to have travel management plans in place which may alleviate OHV resource concerns because routes would be designated, potentially reducing cross country and unauthorized travel. Even with a travel management plan, it is unlikely that unauthorized OHV activities would decrease without law enforcement considering the expected increase in pressure throughout the CEAA and the attraction of the sparsely vegetated rolling outcrops of the special status plant habitats to OHV enthusiasts.

Impacts to the resource from OHV use are likely to be of moderate to high magnitude, depending on the intensity (number of OHVs), frequency, and timing of the disturbance. Effects include localized seedbank loss, elimination of individual plants, decreased vigor, and habitat disturbance all of which could contribute to loss of an entire occurrence.

Fire Suppression & Wildfires: Throughout the entire CEAA, wildfires have burned approximately 80,892 acres (Map FIRE-1, 2, 3; Section 3.2 - Table CMLV-2) If wildfire occurs in an upland vegetation community that is stressed, there is a greater likelihood for non-native annual weed invasion resulting in increased competition for resources between native and non-native species during recovery. In the long term (more than 10 years), the shift in species composition toward an increase of fine fuels (annual weeds) in the community can lead to an abbreviated fire cycle and decreased species diversity. This stresses the ecological stability of upland vegetation communities and special status plants increasing the risk in the foreseeable future of habitat fragmentation with the compounding impact of interrupting the

transfer of pollinators and gene flow between occurrences of special status plants (Tepedino, Sipes, Barnes, & Hickerson, 1997) throughout the CEAA.

Wildfires will have the greatest indirect effects on special status plants at lower elevations where precipitation is scarce and recovery is slow. Higher elevations tend to be more resilient to wildfire because of the increased precipitation, which aids in faster recovery. Past and present disturbance from wildfires is likely more frequent at lower elevations than historic regimes due to an increase in fine fuel load. At mid- to upper elevations, disturbance from wildfires is less frequent than expected under a natural, historic regime. Change in the natural fire regime combined with season-long livestock grazing disturbance (typical of most past and at least some current/future allotments) has created an altered disturbance regime that has likely stressed special status plant occurrences. Wildfires are expected to continue in the reasonably foreseeable future and cause adverse indirect effects on special status plants through changes in vegetation composition.

Mining Claims: Mining activities occur within Boone Peak, Bridge Creek, Toy, and West Castle occupied pastures, totaling 990 acres in the project area. Of the eleven species with occurrences in the project area, seven are specific to soils derived from volcanic ash and are largely rare because of limited habitat. A serious threat to these species associated with volcanic ash outcrops is from zeolite or bentonite mining. When impacts do occur, the magnitude of the impact is high in the localized area with adverse effects of habitat degradation, potential elimination of individual plants and entire occurrences. Nine of the 11 special status plant species could endure potentially high magnitude of effects from mining to localized occurrences throughout the CEAA; however, reasonably foreseeable future mining is not likely.

Noxious Weed Treatment: There are 2,114 documented weed infestations throughout the CEAA, including 470 within the Group 3 allotments, and 139 within allotments occupied by special status plants (Box T, Garrett FFR, Hart Creek, Lone Tree, Toy, and West Castle) (Table SSPS-3). A majority of the sites are reported to be less than 1 acre, with most receiving chemical treatment and the remainder treated mechanically. Weed treatment would have low to no impacts on special status plants because avoidance measures would be adhered to in areas of occupied habitat.

Table SSPS-3: Noxious Weed Occurrences in the CEAA

Allotment	Canada Thistle	Leafy Spurge	Rush Skeletonweed	Russian Knapweed	Scotch Thistle	Tamarisk	Whitetop	Totals
Alder Creek FFR							1	1
Box T	5						23	28
Brown's Creek					6		30	36
Garrett FFR							2	2
Hart Creek				1	1	1	31	34
Louisa Creek	4						28	32
Red Mountain					10		52	62
Toy	2	25			3		9	39
West Castle				1		2	33	36
Whitehorse/Antelope			1	18	11	1	169	200
Grand Total	11	25	1	20	31	4	378	470

Existing Conditions & Baseline

BLM Manual 6840 (USDI BLM, 2008) and the ORMP objective for special status species and their habitats state that special status species are to be maintained or increased to a level that would avoid listing under the ESA. The 6840 manual also states the objective to implement proactive conservation measures that reduce or eliminate threats to special status plants and a need to list. These objectives are a minimal standard and since all special status plants and their habitats should attain this, the threshold for the cumulative effects analysis was set to these objectives.

Table SSPS-4: Occurrences of SSPS by allotment

Allotment	<i>Astragalus yoder-williamsii</i>	<i>Blepharidachne kingii</i>	<i>Catapyrenium congestum</i>	<i>Dimeresia howellii</i>	<i>Eatonella nivea</i>	<i>Eriogonum shockleyi</i> var. <i>packardiae</i>	<i>Glyptopleura</i>	<i>Haplopappus uniflorus</i> var. <i>howellii</i>	<i>Penstemon janishiae</i>	<i>Phacelia minutissima</i>	Allotment Totals
Boone Peak										2	2
Box T	1							1			2
Hart Creek		2	1		1		2				6
Lone Tree				1							1
Toy	1										1
West Castle						1	2		1		4
Species Totals:	2	2	1	1	1	1	4	1	1	2	16

Six (Box T, Garrett FFR, Hart Creek, Lone Tree, Toy, and West Castle) of the 20 allotments that support special status plants, a total of 53,537 acres for the six occupied pastures in the project area, and a total of 16 occurrences for 6 special status plant species (Table SSPS-4) . Because of the lack of monitoring information on special status plants and the implicit connection between upland vegetation communities and special status plants, those pastures with occurrences that are not meeting Standards 4 or 5, or are represented in Standard 6 regardless of whether they are meeting (Box T, Hart Creek, Lone Tree, Toy, and West Castle) are of concern for the overall maintenance and health of special status plants and their habitats.

The CEAA consists of approximately 596,741 acres, and contains a total of 16 occurrences for 6 species. Similar to special status plants in the project area, information for occurrences on adjacent lands is limited, with GIS and aerial imagery being the main resource. Special status plant sites within the CEAA have been influenced by various land use activities as noted above. As a result of these activities, in general, special status plant occurrences in the CEAA are probably stable to slightly declining based on best available information.

3.4.2.1.4.3 Alternatives 1 and 2

As described above in the direct and indirect effects Section 3.2, the general theme of the alternatives would be to authorize livestock use during the spring, summer, and fall. When added to the past, present, and reasonably foreseeable future actions that would affect upland vegetation and associated special status plant occurrences, Alternatives 1 and 2 would continue current conditions and cumulatively have incremental negative effects on special status plants and their habitats.

Past and present livestock grazing has affected upland vegetation and special status plants in the CEAA by disturbing soils and altering vegetation composition with the utilization of key forage species during critical growth periods. Soil disturbance and altered vegetation composition result in opportunity for non-native weed invasion, shortened fire regime interval, and habitat fragmentation, resulting in decreased long-term viability of special status plants and increased susceptibility to habitat degradation. These impacts are most prevalent at lower elevations of the project area where precipitation is limited, and in livestock congregation areas.

Other activities that continue to occur within the CEAA include range improvements, wildfires, weed and vegetation treatments, trailing, roads, OHV, and mining (Table SSPS-2). As documented, OHV use and non-native weed invasion (stemming from alterations in vegetative community and a shortened fire regime) are the main cumulative impacts of concerns for special status plants in the CEAA. The most severe and repetitive impacts from OHV use are concentrated in the Owyhee Front area. Disturbance from OHVs is generally repetitive and in specific locations, with confinement to a small percentage of occupied habitats. Non-native annual weed invasion is widespread throughout lower elevations and in areas of soil disturbance. This contributes to a shortened fire interval and habitat fragmentation. Livestock grazing can perpetuate non-native weed invasion through disturbance of soils and transport of seed.

While the cumulative effects would be small, when added to the grazing scheme of Alternatives 1 and 2, the overall impact to special status plants within the project area would increase. However, this increase is not anticipated to lead to listing under the ESA for any of the species in the short term (less than 10 years), but could be of concern in the long term (more than 10 years).

3.4.2.1.4.4 Alternatives 3 and 4

Alternatives 3 and 4 would have relatively low direct and indirect effects (Section 3.7.5 and Section 3.7.6) to special status plants by reducing the threat of livestock impacts. The alternatives would improve plant communities by dampening critical growing season impacts with periodic deferment or rest allowing time for plants to recover. This built-in recovery time decreases the impacts of the action and, therefore, reduces the combined cumulative impact to special status plants.

Both alternatives would maintain and benefit upland vegetation and special status plants to varying degrees by decreasing plant composition shifts and soil disturbance which provide opportunity for non-native weed invasion. This would result in decreased long term viability of special status plants and increased susceptibility to habitat degradation. These impacts are most prevalent at lower elevations of the project area where precipitation is limited and in livestock congregation areas.

The main cumulative impacts to special status plants within the CEAA are OHV use and non-native weed invasion (stemming from alterations in vegetative community and a shortened fire regime). The magnitudes of impacts from these activities are stated in Table SSPS-2. OHV impacts would be the same as in Alternatives 1 and 2. However, non-native weed invasion would likely decrease slightly, but perhaps not measurably, as grazing rotations incorporate deferment and rest, plant communities recover, and plant vigor improves.

While the cumulative effects would be small, when added to the grazing scheme of Alternatives 3 and 4, the overall impact to special status plants within the project area would increase. However, this increase is not anticipated to lead to listing under the ESA for any of the species in the short term (less than 10 years), and likely not in the long term (greater than 10 years).

3.4.2.1.4.5 Alternative 5

Alternative 5 would provide extended rest to special status plants from livestock grazing over the life of the permit. Removing this stress would allow for recovery from year to year and added resilience of the special status plant occurrences when dealing with drought and wildfire. Although the risk of wildfire and plant community shifts are inevitable, alleviating livestock impacts to all allotments would provide the slowest expansion of non-native annuals and depress the broadening of altered fire regimes across the landscape. This alternative, when added cumulatively to effects from other activities described above, would not lead to listing under the ESA for any of the special status plants in the project area. In fact, this alternative would initiate proactive conservation measures that reduce the threat of livestock impacts in an effort to minimize any need for listing of these species under the ESA.

3.4.2.1.5 Wildlife and Special Status Animals

3.4.2.1.5.1 Resource-Specific Analysis Area

Scope: The cumulative effects analysis area (analysis area) for fish and wildlife resources is delineated by the approximately 5.7 million-acre Owyhee subpopulation (i.e., north-central Nevada/southeast Oregon/southwest Idaho) (Map CMLV-3) (Connelly, Knick, Schroeder, & Stiver, 2004). The Toy Mountain group of allotments analyzed in this EA consists of 20 allotments that have a total of 135,500 acres of public land. The Toy Mountain group of allotments makes up approximately 2.4 percent of the total analysis area.

Rationale: Selection of too broad an analysis area, such as the entire range of the species or a sage-grouse management zone, would likely dilute any potential cumulative effects of a grazing permit, whereas selection of too small an area such as a portion of a pasture may almost always show effects. Given the current conservation importance of greater sage-grouse, it is logical, if not imperative, to choose an analysis area that is biologically relevant to the species. The Owyhee subpopulation area also provides meaningful context and relevance for large and/or highly mobile species (e.g., big game, raptors, and migratory birds) while greatly exceeding the range of many resident fish and wildlife species. Analysis timeframes include past activities that have created the present conditions, and future activities planned within the next three years, including the expected duration of effects from current and future activities (generally 10 to 20 years).

Time Frame: Past actions must still be affecting the analysis area to be included in the cumulative effects analysis. This means that the effects of that action are still apparent within the analysis area. Individual past and present actions will not be discussed but the types of actions and their impacts are discussed to give an understanding of the current conditions within the analysis area.

Direct and indirect impacts from the alternatives on wildlife:

1. Alteration of habitat in a way that reduces forage and cover or increases predation.
 - a. Reduction or removal of deep-rooted perennial grasses and forbs
 - b. Reduction of sagebrush height and canopy cover
 - c. Direct competition with wildlife for forage
 - d. Reduction of vigor, extent, and complexity of riparian habitats
 - e. Provide habitats for predators or vectors

Past Present and Reasonably Foreseeable Actions

Livestock Grazing: The majority of the analysis area has a long history of livestock grazing and historic stocking rates and seasons of use have altered habitats from reference conditions. In many areas perennial

grasses and forbs have decreased while shrubs and trees have remained the same or increased. Current livestock practices continue to limit many of the upland and riparian habitats by overutilization, trampling, or grazing during the active growing seasons or hot season every year. Fences, developed springs, and reservoirs also alter habitats and impede natural movements for wildlife. There are currently 251 active BLM allotments and many Forest Service and state grazing leases in the 5.7 million-acre analysis area. Livestock grazing will continue within the analysis area and grazing permits will be renewed when they expire. Given BLM and Forest Service mandates to maintain the health of wildlife habitat, many of the grazing permits will have altered terms and conditions that will limit seasons of use and stocking rates to ensure that wildlife habitats are maintained or improved.

Wildfire: Fire is a natural part of many of the plant communities within the analysis area and help maintain a variety of habitat types. However when wildfires burn the same areas more frequently than normal then the natural vegetation community is slower to recover and invasive species often begin to out-compete them and dominate the sites. Invasive species such as cheat grass don't provide the same quality of forage or cover that natural plant communities provide. This limits the habitat quality and may impede successful reproduction and survival of wildlife species. Between 1985 and 2013, 1,206,527 acres have burned within the analysis area. Depending on the location, frequency, and intensity of the fires they may have either been beneficial or detrimental to the vegetation communities. Wildfires will continue to occur each year within the analysis area but the extent and impacts are unknown.

Vegetative treatments: Between 1952 and 2011 at least 28,378 acres of vegetation treatments have occurred within the analysis area. Vegetation treatments include prescribed fires, juniper and sagebrush control, and non-native perennial grass seeding. Treatments like juniper control and prescribed fire can assist to maintain the natural shrub steppe communities. But removing sagebrush and seeding non-native perennial grasses alters the habitats and reduce the natural abundance and distribution of native plant species that provide forage and cover for wildlife.

Agriculture: As of 2011, approximately 621,207 acres of land had been converted to agriculture. Agriculture typically removes all native vegetation and alters natural water flow patterns. Agriculture also can provide abundant forage for some wildlife species. Approximately 11 percent of the cumulative effects area is comprised of agricultural lands, the majority of which are hay fields in support of local grazing operations. Most of this acreage occurs along the region's rivers and streams. Due to these practices, the former riparian habitats in many of these floodplain areas are deteriorated or absent. Although these areas have been substantially altered, they still may provide valuable habitat for many wildlife species.

Roads and Transmission Lines: More than 8,000 miles of roads of varying surface types and use levels occur within the analysis area. Although some of these miles comprise major roads and highways, the overwhelming majority are low use, unmaintained two-tracks. Roads directly remove habitat when they are constructed and after construction they fragment habitat and can be a source of direct mortality to wildlife. Major paved and graveled roads fragment habitat to a far greater extent than unmaintained dirt roads. Although roads present both spatial and temporal barriers to home range, dispersal, and migratory movements of a variety of wildlife species, the low population density of the cumulative effects area and relatively low use levels of most roads limits many of the negative effects and disturbance associated with transportation networks. Transmission lines provide habitat for avian predators like hawks, eagles, and ravens which allows them to breed and hunt in areas where they may not have in the past. Roads also increase the abundance of carrion from road kills that may allow raven populations to be maintained at a higher than natural level. The Gateway west project is the only reasonably foreseeable action in the analysis area and it would add between 16 and 25 miles of new roads and transmission lines.

Table WDLF-23: Past, present, and foreseeable future actions within the cumulative effects analysis area for fish and wildlife

Type of Activity	Past and Present	Reasonably foreseeable additions
Grazing	251 active BLM allotments	Permits will be renewed/modified as they expire
Wildfire	1,206,527 acres (1985-2013)	Unknown
Vegetation Treatments (Prescribed Fire and Mechanical)	At least 28,378 acres (1952-2011)	9,750 acres
Agriculture	621,207 acres (up to 2011)	None
Roads and Transmission Lines	8,083 miles	16-25 mile (Gateway West Project)

3.4.2.1.5.2 Common to All Grazing Alternatives

3.4.2.1.5.3 Alternative 1

Under Alternative 1, current grazing management would continue. The management occurring on most allotments has reduced cover and forage for wildlife in upland and riparian habitats. Frequent grazing during the active growing season in the uplands has led to a reduced abundance of deep-rooted perennial grasses and forbs which provide cover and forage for wildlife species. Continuation of hot-season grazing would concentrate livestock use on riparian areas, thus decreasing riparian vegetation that wildlife use for nesting substrate, cover, and foraging habitat. These effects would maintain current conditions within the Toy Mountain allotments and negligibly contribute to an overall decrease in the quality of fish and wildlife habitat throughout the analysis area.

3.4.2.1.5.4 Alternative 2

Under Alternative 2 the majority of allotments would maintain their current grazing practices but would receive additional active AUMs. Current grazing practices often involve grazing during the active growing season and hot season every year. More active AUMs would increase the intensity of use during the active growing season and the hot season. This would further reduce the forage and cover for riparian and upland wildlife species. These factors when added to the current condition within the analysis area would result in slightly more degradation, compared to the current condition, in 2.4 percent of the analysis area and negligibly contribute to an overall decrease in the quality of fish and wildlife habitat throughout the analysis area.

3.4.2.1.5.5 Alternative 3

Under Alternative 3 the Toy Mountain allotments would be put on a rotational grazing schedule that would provide allotments or portions thereof of deferment during the active growing season one or two years in every 3-year period and would implement limits on utilization, stubble height, and bank alteration to mitigate impacts from grazing during the active growing season. Additionally active AUMs would be decreased on most allotments. Overall wildlife habitats in the uplands would improve as perennial grasses and forbs increase in vigor, reproduce, and establish plants. Cover and forage would increase as a result and wildlife survival and reproduction would be more successful. In the riparian habitats herbaceous and woody vegetation would increase in vigor and would expand and increase in complexity which would increase forage and cover for riparian dependent species. When added to the current conditions within the analysis area the expected conditions under Alternative 4 would improve habitat quality on 2.4 percent of the analysis area and would negligibly contribute to the improvement of the analysis area wildlife habitat.

3.4.2.1.5.6 Alternative 4

Under Alternative 4 the Toy Mountain allotments would be put on a rotational grazing schedule that would provide allotments or portions thereof of rest or deferment during the active growing season two years in every 3-year period. Additionally active AUMs would be decreased on most allotments. Overall wildlife habitats in the uplands would improve as perennial grasses and forbs increase in vigor, reproduce, and establish plants. Cover and forage would increase as a result and wildlife survival and reproduction would be more successful. In the riparian habitats herbaceous and woody vegetation would increase in vigor and would expand and increase in complexity which would increase forage and cover for riparian dependent species. When added to the current conditions within the analysis area the expected conditions under Alternative 4 would improve habitat quality on 2.4 percent of the analysis area and would negligibly contribute to the improvement of the analysis area wildlife habitat.

3.4.2.1.5.7 Alternative 5

Under Alternative 5 no livestock grazing would occur on public land for 10 years. This would create a large area of public land where no grazing would occur and overall wildlife habitats in the uplands would improve as perennial grasses and forbs increase in vigor, reproduce, and establish plants. Cover and forage would increase as a result and wildlife survival and reproduction would be more successful. In the riparian habitats herbaceous and woody vegetation would increase in vigor and would expand and increase in complexity which would increase forage and cover for riparian dependent species. When added to the current conditions within the analysis area the expected conditions under Alternative 5 would improve habitat quality on 2.4 percent of the analysis area and would negligibly contribute to the improvement of the analysis area wildlife habitat. Improving fish and wildlife populations within the allotment would negligibly contribute to more robust regional fish and wildlife populations.

3.4.2.1.6 Recreation and Visual Resources

3.4.2.1.6.1 Resource-Specific Analysis Area

Cumulative effects to recreation and visual resources within the Group 3 Allotments would primarily be the result of grazing, future utility corridors, and current and future actions that stem from the OMA. The area of analysis for cumulative effects is the resource area delineated by the Snake River to the north, Silver City and Flint Creek to the west, Birch Creek on the east, and Mud Flat Road to the south. This area is a good representation of the summer/fall recreation activity that occurs within the area. The timeframe considered is activities since OMA for current conditions and activities planned within the next 3 years, and the expected duration of effects from those activities (generally 10 to 20 years).

3.4.2.1.6.2 Common to All Alternatives

Recreation – All Alternatives

Cumulative analysis of the alternatives listed above, when added to past, present, and future actions, within the cumulative analysis area, would have minimal effects to recreation overall. Because there are very few effects that are expected from any of the alternatives listed above, positive or negative, cumulative effects would be minimal for recreation. Opportunities for recreational activities in the cumulative analysis area are abundant and would endure the minimal impacts from any of the alternatives.

Impacts associated with past, present, and future activities would consist of range improvements, such as fences, identified throughout the analysis area that would reduce some opportunities for non-motorized cross country travel. Accessibility in the area for hunters and other recreationists who rely heavily on roads and trails for motorized access could potentially be impacted as a result of future travel planning. Impacts to recreationists from future utility corridors would be minimal, as utility corridors currently exist

throughout much of the travel management area. During periods of livestock use, there would be an increase in potential human/livestock interactions.

In the long term, the combined effects of suitable grazing management and travel management planning within the cumulative analysis area would be beneficial to the overall health and scenic quality of the area, which in turn would result in an improved recreation experience.

Visual Resources – All Alternatives

Few effects to visual resources are expected from any of the alternatives within the cumulative analysis area. Grazing activities throughout the analysis area would contribute in varying magnitudes toward cumulative effects by influencing plant species composition within the uplands as well as riparian areas. While these impacts may be greater or lesser within differing allotments, overall these impacts would be considered minimal throughout the cumulative analysis area as a whole.

There is potential for a new 500KV power line within the travel planning area. The proposed line, if constructed, would travel through Class IV VRM. Although there are obvious impacts to visual resources associated with 500KV power lines, these impacts are considered to be minimal, due to the fact the utility corridors would occur within Class IV VRM and these impacts are considered acceptable with the VRM objectives for the area.

The effects of future actions such as travel management planning throughout the cumulative analysis area would be beneficial to the overall health and scenic quality as resources are further protected. Overall, the combined effects of suitable grazing management, or no grazing, and travel management planning within the cumulative analysis area would be beneficial to the overall health and scenic quality of the area.

3.4.2.1.7 Areas of Critical Environmental Concern (ACECs)

3.4.2.1.7.1 Resource-Specific Analysis Area

The cumulative effects analysis area for ACECs is defined by the bounds of the Bureau of Land Management Owyhee Field Office. The land use plan for the Owyhee Field Office, the ORMP, designated 12 ACECs totaling 167,372 acres. Restrictions to activities authorized were included in the management direction provided by the plan.

3.4.2.1.7.2 Common to All Grazing Alternatives

For all alternatives activities excluded, prohibited, or restricted in the 12 ACECs, as identified in the ORMP, would retain relevant and important values unchanged and protected in the cumulative effects analysis area. When these consequences are combined with the past, present, and reasonably foreseeable future actions that have impacted ACECs within the CIAA, conditions and health of the ACECs within the Toy Mountain Group allotments would meet or move toward meeting ORMP objectives and the Idaho Standards for Rangeland Health.

3.4.2.1.7.3 Alternative 1 – 4

Activities restricted within this ACEC, including salting, would continue to be restricted equally under each of the four alternatives, as directed by the ORMP guidance. Alternatives 1, 2, 3, and 4 do not include proposals to construct projects or engage in surface disturbing activities. As a result, none of the activities excluded or prohibited within the Cinnabar Mountain RNA/ACEC would be affected. Relevant and important values for which this ACEC was designated would continue to be protected. Alternatives 1-4 would allow progress toward meeting upland vegetation health and vigor; including meeting ORMP objectives, and keeping this high elevation habitat RNA/ACEC as near as possible to reference sites.

ORMP and FEIS 1999 explains Restricted Livestock management as; Salt placement within and adjacent to the area will be considered on a site specific basis for maximum protection of identified resource values. Domestic livestock grazing use (active preference) will not be increased within the area boundaries. Fencing may be necessary to exclude livestock in areas where degradation of identified resource values occurs (USDI BLM, 1999a).

3.4.2.1.7.4 Alternative 5

The no-grazing alternative would not include activities excluded or prohibited within the Cinnabar Mountain RNA/ACEC. Similarly, the alternative would eliminate the need for compliance inspections related to restrictions to livestock grazing and salting within the portions the ACECs that occur in the Toy Mountain Group allotments. Elimination of the need for compliance inspections related to restrictions to livestock grazing and salting would extend through the 10-year term of livestock exclusion from the Toy Mountain Group Chipmunk allotments. Relevant and important values for which the ACEC was designated would continue to be protected. Alternative 5 would allow significant progress toward meeting upland vegetation health and vigor; including meeting ORMP objectives.

3.4.2.1.8 Social and Economic Values

3.4.2.1.8.1 Resource-Specific Analysis Area

The scope of this analysis covers Owyhee County, ID, and Malheur County, OR, because although the Owyhee Field Office has jurisdiction only over the allotments within the Owyhee Resource Area, the ranchers applying for livestock grazing permit renewals maintain base ranches near Jordan Valley, Oregon.

Past, Present, and Reasonably Foreseeable Future Actions

As stated in the background Section of this EA, the BLM Owyhee Field Office prioritized and grouped allotments to fully process and renew grazing permits in accordance with the Order Approving Stipulated Settlement Agreement (United States District Court for the District of Idaho Case 1:97-CV-00519-BLW) dated June 26, 2008. The agreement defined a schedule for completing the environmental analyses and final decisions for grazing permits in a number of allotments.

Past actions taken regarding grazing permit renewals will affect the socioeconomic conditions in both counties because they influence decisions the operators make regarding their ranches. There are 124,251 active use AUMs permitted in Owyhee County (135,116 active use AUMs in the ORMP (USDI BLM, 1999a) minus the 9,558-AUM reduction in the Final Decisions for the Owyhee River Group Final EA (DOI-BLM-ID-B030-2012-0012-EA), the 576-AUM reduction in the Final Decision for the Pole Creek Allotment Final EA (DOI-BLM-ID-B030-2009-0004-EA, and the 731-AUM reduction in the Proposed Decision for the Final Trout Springs and Hanley FFR EA (DOI-BLM-ID-B030-2009-0003-EA; the Proposed Decision for the Final Nickel Creek FFR EA (DOI-BLM-ID-B030-2011-0006-EA) includes no changes in AUMs), and 407,473 active use AUMs permitted in the Malheur and Jordan Resource Areas in Oregon (USDI BLM, 2002b). Proposed Decisions and the Final EIS (DOI-BLM-ID-B030-2012-0014-EIS) for the Chipmunk Group, which is the second of six groups in the Owyhee 68 priority allotments, will be released in October 2013; the economic impact figures used in that EIS will be used for this cumulative effects analysis. Table SOCE-13 shows the value to the community of AUMs for each of the alternatives in this EA, combined with the final changes in the Owyhee River Group and proposed changes in the Chipmunk Group and the Group 6 allotments (Fossil Butte Group, Nickel Creek FFR, Trout Springs, Hanley FFR, and Pole Creek), as well as estimated possible changes for the Toy Mountain and South Mountain Groups.

3.4.2.1.8.2 Common to Alternatives 1 through 5

Currently, for Alternatives 1-4 in this EA, as long as the ranches remain in business, they will continue contributing to employment and the purchase and sale of goods and services in the local areas, and community cohesion will be maintained. For Alternative 5, not renewing the permits would mean that the BLM would no longer be contributing to the ranching community by providing grazing land, and if the ranches chose to close, the operators would no longer be contributing to employment or the purchase and sales of goods and services in the community. The U.S. government would continue contributing to the county through payments in lieu of taxes (PILT), which totaled more than \$9.5 million in Owyhee County from 2003 to 2012, for an average of about \$956,000 per year. Ranching plays a large role in both counties, so although the loss of any or all of the Morgan Group ranches alone could have a substantial impact on the local communities, the loss, which is small in proportion to the total livestock operations' contributions to the two-county area, likely would not have a cumulative effect on a larger scale. However, AUM changes incorporated in the alternatives presented here, combined with proposed or final AUM reductions in the Owyhee River Group and some Group 6 (Pole Creek, Nickel Creek FFR, Trout Springs, and Hanley FFR¹⁸⁰) allotment permits, could have either positive or negative impacts to local suppliers, since the operators associated with all of these allotments might choose to alter ranch operations in ways that would require either increases or reductions in supply purchases.

Allotments in the analysis area are in various stages of the 10-year permit cycle, and as expiration dates approach, each allotment is evaluated for rangeland health and progress toward meeting the Fundamentals of Rangeland Standards prior to the authorization of a new permit. Following these evaluations, the BLM will prepare NEPA documents, either in the form of Environmental Assessments or Environmental Impact Statements. As noted in Section 1.3 of the EA, livestock grazing permits for all of the Owyhee 68 allotments must be renewed by December 31, 2013; draft Environmental Assessments are currently being prepared for the Toy Mountain and South Mountain priority allotment groups (Groups 3 and 4), as well as some of the Group 6 allotments, all of which will be released within a few weeks of each other. These documents will analyze the social and economic impacts of implementing multiple alternatives, just as this Group 5 EA does, and will be followed by Proposed and Final Decisions regarding renewal of each of the grazing permits. While it is not possible to analyze those impacts in this EIS because future possible changes in the management of the Toy Mountain and South Mountain groups have not been released, estimates of impacts based on a range of AUMs are presented below.

It would be speculative at this time for this EA to include the cumulative effects from those future actions not yet defined, and for which final decisions have not been issued. Future NEPA analysis in all Owyhee planning area grazing permit renewal efforts will include the cumulative effects of past, present, and foreseeable actions at that point in time. That analysis will include the cumulative effects to the social and economic environment that result from implementing the selected alternative in this EA. For any allotments in Groups 3 through 6 that meet all Standards and Guidelines, reductions in AUMs may not occur; renewing permits for all of the allotments in Groups 3, 4, and 6 (for Group 6, this includes only the allotments without recent proposed or final decisions) at currently permitted levels would maintain active permitted use at 24,350 AUMs. However, because reductions in AUMs have been proposed on allotments in the Owyhee River, Chipmunk, and Morgan Groups that have not met Standards or Guidelines, it is reasonable to assume that future reductions may occur on any allotments in Groups 3, 4, and 6 that are not meeting Standards or Guidelines as well. Those potential reductions, combined with any impacts that may result from changes in management of the Owyhee Group and some Group 6 allotments and proposed changes in the Chipmunk Group and Morgan Group allotments, could have substantial impacts on local

¹⁸⁰ The Group 6 allotments listed above all have either Proposed or Final Decisions that have recently been released for public review. Grazing permit renewals for the remaining Group 6 allotments (Fossil Butte, Sinker Butte, Con Shea, Murphy FFR, Montini FFR, and Joyce FFR) are currently being developed, and Draft and Final EAs, as well as Proposed and Final Decisions, will be released within the same timeframe as Groups 3 through 5, with Final Decisions released before December 31, 2013.

economic activity. Social and economic effects experienced locally from reductions on each permit would be compounded on a county-wide or regional basis.

In addition to the Owyhee 68 permits, there have been decisions recently issued by the BLM Owyhee Field Office that, when implemented, will contribute cumulative effects to the social and economic environment in the analysis area (See Section 2.2 for a description of the grazing permit renewal summary). The Pole Creek Allotment Final EA analyzed, and the proposed decision selected, a 576-AUM reduction. The Final EA and Proposed Decision for the Trout Springs and Hanley FFR allotments was released September 20, 2013, and selected an authorization of 699 active use AUMs, for a reduction of 731 active use AUMs. The Final EA and Proposed Decision for the Nickel Creek FFR allotment selected an authorization of 109 AUMs, which is the same as the previous grazing permit. In the context of cumulative effects analysis, these reductions are considered foreseeable actions rather than speculative because the NEPA analysis is completed and the proposed or final decisions have been issued.

A number of permit renewals have been completed and implemented since implementation of the ORMP in 1999 that may have residual effects to the social and economic environment today. Eighteen of the 134 allotments in the Owyhee Field Office considered in this cumulative effects analysis have had AUM reductions and include Castlehead-Lambert, Cliffs, Elephant Butte, Garat, Hardtrigger, Rockville, Rabbit Creek/Peters Gulch, Swisher Springs, Strodes Basin, Trout Springs, Bull Basin, Nickel Creek, Gusman, Silver City (which was combined with Diamond Creek after ORMP publication), Louse Creek, Burghardt FFR, '45', and Tent Creek. The effects of issuing these permits resulted in AUM reductions totaling 20,766 within the planning area (ORMP table LVST-1, RAS data (available from the Idaho BLM State Office project record upon request)).

The cumulative effects to the social and economic environment analyzed in this EA are within the context of the following three analysis assumptions:

- When it was completed in 1999, the Owyhee Resource Management Plan (ORMP) identified 135,116 active use AUMs in the planning area (Proposed RMP at 23). The Final EIS projected that meeting the rangeland health objectives through the implementation of Alternative E (the selected RMP) would cause substantial adjustments to be made in livestock grazing throughout the planning area (EIS at IV-269). The EIS concludes in the effects to livestock management Section (IV-271) that active use AUMs would decrease 22 percent, or about 30,000 AUMs over the estimated 20-year life of the plan. The level of AUM reductions analyzed in the grazing alternatives in this EA, added to all AUM reductions implemented or proposed in other permit renewal actions within the planning area, would result in 115,320 active use AUMs permitted, and would be within the AUM reduction levels analyzed in the Final ORMP/EIS (105,899 AUMs by 2019)¹⁸¹.
- In pursuit of meeting the resource objectives in the ORMP as well as the Standards for Rangeland health, the above AUM numbers are approximate estimates and future authorized levels of livestock use may change. If future AUM reductions within the Owyhee Field Office are greater than those analyzed in the ORMP/EIS, they will be subject to further NEPA analysis.
- The CEQ regulations state that the *"Human environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See the definition of "effects" (Sec. 1508.8).) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact*

¹⁸¹ This document tiers to the ORMP Final Decision and incorporates the Final ORMP EIS by reference.

statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment (40 CFR 1508.14). The effects analysis in this EA discusses the social, economic, natural, and physical environment in this context.

Table SOCE-13: Total value of Owyhee 68 Groups 1-6 permitted AUMs to the community¹

Alternative	Value of AUMs to community	Total value to community with full authorization of Groups 4&5 AUMs	Total value to community with 75% authorization of Groups 4&5 AUMs	Total value to community with 50% authorization of Groups 4&5 AUMs	Total value to community with 25% authorization of Groups 4&5 AUMs	Total Value to community with no grazing in Groups 4&5
1 (No Action)	\$2,936,524	\$3,273,098	\$3,188,955	\$3,104,811	\$3,020,668	\$2,936,524
2	\$3,373,843	\$3,710,417	\$3,626,274	\$3,542,130	\$3,457,987	\$3,373,843
3	\$2,433,738	\$2,770,312	\$2,686,168	\$2,602,025	\$2,517,881	\$2,433,738
4	\$2,047,293	\$2,383,867	\$2,299,724	\$2,215,580	\$2,131,437	\$2,047,293
5 (No Grazing)	\$966,078	\$1,302,652	\$1,218,509	\$1,134,365	\$1,050,222	\$966,078

¹Based on estimates by Darden et al (See Section 3.1.8 above)

²The first column is the value of AUMs to the community from the Owyhee River Group, Chipmunk Group (minus Alternative 5), and Toy Mountain Group allotments, as well as the Group 6 allotments with proposed or final decisions (Pole Creek, Nickel Creek FFR, Trout Springs, and Hanley FFR) allotments; all other columns include the total value from column 1 plus the total value of the AUMs in Groups 4 and 5 at different possible authorization levels.

3.4.2.1.9 Cultural and Paleontological Resources

3.4.2.1.9.1 Resource-Specific Analysis Area

The scope of analysis for the Toy Mountain Group allotments is considered to be the individual allotment boundaries. The range of known cultural site characteristics is similar to those in the surrounding areas, the group is not part of a historic district under which sites could have a contributing element potential or would need additional protection, and there are no recorded or known Traditional Cultural Properties or scared sites within the allotments.

3.4.2.1.9.2 Common to All Grazing Alternatives

The potential effects from livestock grazing upon cultural resources are discussed in Section 3.2.9. The greatest threat to the resources is the congregation of animals at site locations. If historic properties experience ground disturbances deeper than 10 centimeters below surface level, there is the possibility of affecting buried cultural deposits and the site's potential eligibility for the NRHP may be compromised.

Paleontological Resources

The allotment groups' boundaries comprise the scope of the analysis for paleontological resources. Unlike cultural resources, there are no specific requirements to complete paleontological inventories for undertakings on BLM managed land. Fossil discoveries may occur during a NHPA Section 106 survey, as a result of academic research or from a private party's disclosure. The presence of fossil-bearing strata is limited to parts of four allotments in this group. There are 30 paleontological sites recorded in the allotments group, but none of them are located in proximity to an identified actual or potential livestock congregation area. Due to the small number of fossil locations and a low potential for discovery, no cumulative effects are predicted for paleontological sites in this allotments group.

3.4.2.1.9.3 Alternative 1 to 5

Alternatives 1 and 2 would fundamentally continue the current grazing systems of the expiring permits. Under these systems, generally the minor effects to sites caused by livestock grazing could be expected to continue, but would not be expected to affect a site's NRHP eligibility. Alternatives 3 and 4 can decrease the possibility of grazing impacts by changing the season of use, reducing the numbers of livestock and/or including pasture rest cycles. Potential and actual effects as previously discussed would apply to these two alternatives. Any effects to unrecorded sites may continue depending upon their locations. The proposed changes for the Red Mountain allotment would not affect historic properties. Because any new undertakings proposed for the allotments would require a separate cultural resources review under NHPA, no cumulative effects are expected under these alternatives.

Alternative 5 would remove any possibility of livestock grazing effects to cultural resources and since any future proposed undertakings unrelated to these permit renewals would be subject to a separate NHPA compliance review, there are no cumulative effects expected under this alternative.

4 CONSULTATION AND COORDINATION

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7 APPENDICES

See separate Appendices document.

8 MAPS

See separate Maps document.